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ABSTRACT

These six issues of "TECH-NJ" from winter 1997 to fall 1998 focus on technology and children with disabilities in New Jersey. Featured articles include: (1) "Untangling the World Wide Web" (Kathleen Foster and Gerald Quinn); (2) "Combining Technology with Cooperative Learning: The Great Solar System" (Lisa Gregory); (3) "Equal Access = Equal Opportunity" (Leah Best-Damron); (4) "A Troubled Teen Embraces Computers" (Katherine McCandless); (5) "For Beginners: Go Online To Meet New Friends, Find Educational Resources & Explore the World" (Gerald Quinn); (6) "LD Class Joins Balloonin' USA via the Internet" (Kathleen Foster); (7) "Customized Scanning Array for Curriculum Integration" (Amy Stollsteimer); (8) "Everyone Can Create Music" (Donna Williams); (9) "Functional Communication in a Life Skills Class" (Regina Quinn); (10) "Taking Computer Literacy Personally: Creating Cultural Heritage Stacks" (Liesl Oberfeld); (11) "Computers Help a Child Gain Control" (Helene Mann); (12) "Living a Full Life with the Aid of Minspeak(TM)" (Anthony Robert Arnold); (13) "Tech Trek: A Journey into the World of Multimedia" (Kathleen Foster); (14) "Word Prediction Makes the Difference: Learning Disabilities in Middle School" (Danielle Niemann); (15) "Online Treasures To Energize Lesson Planning" (Regina Quinn); (16) "Inclusion: Recommended Sites on the Internet" (Orah Raia); (17) "Story-Telling in ASL and Written English" (Amily Beidelman); (18) "Adventures in Artland: CD-ROM's for the Tortured Artist in Everyone" (Donna Williams); (19) "Selecting Software: Where Do I Begin" (Amy Dell and Anne Disdier); (20) "Technology's Role in the Education of a Blind Student" (Theresa Lupo); (21) "Teachers Work Together To Make Inclusion Happen" (Orah Raia); (22) "Assistive Technology Promotes Rapid Academic Advances" (Gerald Quinn); (23) "Coping with Learning Disabilities" (Maryann Bowne); (24) "Fast Forward(TM): Is the Hype Justified?" (Jean Earle); (25) "The Teachers' Role

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in Augmentative Communication" (Amy G. Dell and others); (26) "Reforming Teacher Education To Foster Inclusion" (Amy G. Dell); (27) "Technology in Two Professionals' Lives" (Theresa R. Lupo); (28) "Augcomm System Provides a Voice For a Young Child with Autism" (Cynthia Bott); (29) "Software Programs for Speech Therapy" (Orah Raia); and (30) "Choosing Software for the Classroom Music Teacher" (Donna Williams). Each issue also includes reviews of computer software. (CR)

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TECH–NJ

Technology, Educators, & CHildren with Disabilities—New Jersey

Volume 7 Numbers 1 & 2

Volume 8 Numbers 1 & 2

Volume 9 Number 1

Volume 10 Number 1

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TECH-N.J

Technology, Educators, & CHildren with disabilities-New Jersey

Trenton State College School of Education
Department of Special Education

Winter 1996, Vol. 7. No. 1

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UNTANGLING THE WORLD WIDE WEB

by Kathleen Foster and Gerald Quinn

The information superhighway connects a world of learning opportunities directly to our fingertips. The sheer number of curriculum ideas, teacher resources and student resources can seem overwhelming. This article will highlight areas available on America Online (AOL) and the World Wide Web (WWW) recommended for teachers and students.

Sites on America Online

America Online offers an incredible variety of resources and information on the area of education. One of your first stops should be to the *Teachers' Information Network*, which is accessed through **Keyword: Education.** The network contains resources and information geared directly toward classroom instruction. The *Electronic Schoolhouse* - **Keyword: ESH** - located within the *Teachers' Information Network*, is designed specifically for class to class connections. To get started, explore the **School to School: Projects** board where teachers/moderators gather participants for structured class-link projects and adventures. To get a quick fix on what's happening and when, the *Electronic School House* offers the **ESH Projects & Adventures** listing and the **ESH Project & Chat Calendars** area.

The *Teachers' Information Network* also contains folders organized around exchanging ideas regarding specific subjects. The Idea Exchange is organized by subject and contains message boards for teachers, **Exam Exchange** opportunities and **Lesson Plan Libraries**. The **Lesson Plan Libraries** are organized first by grade level, and then by subject. You can download a lesson plan you find interesting, as well as upload one of your own plans that you are especially proud of. The steps required in uploading one of your own plans are described in "Adding a Plan to the Library" folder. It is important to note that not only will your lesson plan receive national attention, but AOL offers free hours of connect time for each 50 downloads your lesson plan receives.

The *Teachers' Information Network* also contains an **Education Magazines Database**. The database includes information on 300 different educational magazines, journals, newsletters, annual reports and guides, and periodicals ranging from *Highlights Magazine* to *American Educator* to *Nature* to *National Geographic*. Each entry in the database contains (i) the name of the magazine, (ii) its publisher, (iii) an address, (iv) a phone number, (v) the name of the editor or contact, (vi) the number of issues/year, (vii) the cost of an annual subscription, and (viii) a brief description of the content of the material. The database will represent over 500 periodicals by year's end.

Interactive Sites

America Online also offers a number of Interactive Sites. The *Odyssey Project* - **Keyword: Odyssey** - was created by a group of internationally-known photographers as a place to experiment with new forms of publishing and as a way to share their experiences as traveling image makers. The project features visual chronicles of explorations that take you on highly personalized adventures with world-renowned photojournalists. The chronicles are available as picture stories, both online and as downloadable, interactive multimedia segments. The *Scholastic Network* - **Keyword: Scholastic** - offers a **Scientists Online** service that allows teachers and students on *Scholastic Network* to meet experts in a range of

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TECH-NJ:
Technology, Educators, & CHildren with disabilities-NJ

TECH-NJ is an official publication of the School of Education, Department of Special Education at Trenton State College. It is written by students and faculty and is designed to support professionals, parents, and computer-users in their efforts to use technology to improve our schools and to enhance the lives of people with disabilities. In order to facilitate local networking, emphasis is placed on resources and innovative practices in and around the New Jersey region.

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TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

Volume 7, Number 1

EDITORIAL

No matter how frustrating or repetitive things might be in politics or government, at the workplace, or even in our personal lives, we can always count on technology to come up with something new and fun to perk us up. I think that's what gets us computer-enthuasiasts hooked. Sit down at your desk, hit that power button, and in seconds, you're transported. . . to the rain forest, to a city in the future, back in time, to a music studio, to a friendly chat with people around the world who share your interests, whatever they may be.

Non-computer users do not understand this. Witness David Letterman interviewing Bill Gates on *The Late Show with David Letterman*. Dave will never "get it" until he himself gets transported and captivated. The gap between computer-clueless Letterman and computer-user Gates is all too familiar to educational technology advocates.

It is the same gap we've been seeing in our schools for almost 10 years. Too many administrators and teachers are like Letterman - lacking in enthusiasm and seeing no compelling reason to put forth the effort. Until our school administrators become "hooked" themselves, they will remain indifferent when it comes to providing on-going, quality teacher training and reliable technical support. Until teachers are "hooked," they will not make computer integration a high priority in their classrooms. But, administrators and teachers who experience the wonder of computers will take the lead and change our schools. They will recognize the potential of computers to motivate children and to transform the educational process, and their efforts will result in computers finally becoming an integral part of all of our teachers' teaching and all of our children's learning.

With this issue of **TECH-NJ,** we reveal our latest high tech passion - going online. 1995 was the year Trenton State College connected all of its faculty to the Internet via a wonderfully fast fiber-optic system. The world of cyberspace is now at our fingertips, and it is, indeed, an irresistible world. Who wants to do mundane things like grade papers (or write editorials) when cyberspace beckons? Inspired by this newfound thrill, we have added a new column to **TECH-NJ**. In "Online Explorations" we will try to sort through the myriad of possibilities and direct you to sites which have been recommended by teachers, therapists, parents and consumers as having special relevance to teaching and/or to people with disabilities. We hope these practical ideas will help our readers benefit from the incredible richness of this vast universe.

A.G.D.

CLASSROOM APPLICATIONS

COMBINING TECHNOLOGY WITH COOPERATIVE LEARNING: THE GREAT SOLAR SYSTEM RESCUE

by Lisa Gregory

In curriculum courses at Trenton State College, Dr. Ann Shenkle of the Department of Special Education reminds her students that productive and successful people have to know how to share responsibilities, engage the support of other people to achieve a goal, and promote the achievement of every individual so as to attain the best possible group product. To this end she promotes cooperative learning for learners of all ages and skill levels as a teaching strategy which has positive effects on involvement, attitudes, motivation and achievement.

Combining the strategy of cooperative learning with the power of computers is one way to extend the benefits of even a small technology budget. This can be advantageously achieved in the classroom with the help of software that builds problem-solving skills. Some examples of such software would be The *Carmen Sandiego* series from Broderbund and the *Trail* series from MECC.

Finding the Right Match

The Great Solar System Rescue (Tom Snyder Productions), a program on videodisc (also known as laserdisc), is specifically designed as a cooperative learning activity. Middle school students work in groups and learn about planetary science while fulfilling clearly assigned roles within the group. The problems they try to solve and the results of the choices they make together are shown on a video monitor. By making video responsive to students' decisions and encouraging cooperative work, *The Great Solar System Rescue* extends the benefits of one system (a videodisc player) to all of the learners in a class.

Hardware Requirements

The backbone of *The Great Solar System Rescue* is a videodisc. Videodiscs, which look like larger versions of the compact discs used for music and computer software, are similar to videotapes in that they store video and audio information. However, unlike videotapes, videodiscs give clear still pictures when paused and do not need to be fast-forwarded or rewound. Any segment on a videodisc can be played at any time and the access time is negligible. In order to use a videodisc, one needs a videodisc (laserdisc) player, preferably a commercial (CAV) player, not a player designed for viewing movies at home. The videodisc player will come with either a remote control to allow you to input the numbers of the desired segment or a barcode reader to read the barcodes (similar to UPC codes) provided in the manual.

Other than the videodisc player and monitor, no other hardware is actually required to play the game. If one is available, however, a computer (Macintosh or IBM-compatible) can make the game easier to run with the installation of appropriate software. After being connected to a Level III videodisc player, the computer will present menus for you to use with the mouse and then will control the videodisc.

Rescue That Probe

A major part of *The Great Solar System Rescue* is a series of problems to be solved. For each problem, the students take on the roles of historian, astronomer, geologist, and meteorologist. Each role comes with a corresponding booklet of information about that field as it applies to our solar system.

Assuming the roles of these professionals, your students work for Starfleet Command. Starfleet has a problem. Space probes are lost somewhere in our solar system. Luckily each of the probes managed to send one last message. As the students view the message, they note information which pertains to their field of expertise. After consulting their reference booklets, they come together in small groups (with one person of each specialty) to discuss the possible location of the probe. When the small groups have reached their conclusions, everyone comes together and the class decides where to look first. The videodisc contains segments of video for each choice, and the chosen segment is viewed. If the class is mistaken, they can try again.

After the general location (usually a planet) is found, the small groups meet again to decide what tools they should use to pinpoint the location of the probe. These tools can provide information such as temperature, rock type, and photographs. Each use of a tool results in the viewing of a video segment. The small

(continued on page 9)

Group Report for Rescue of Probe # _____

Step 1

Locate the source of the lost probe's transmission.

View the last transmission from the lost probe. Each "expert" on your team should use his or her materials to determine the possible locations of the lost probe. Record their reasons and recommendations below:

Astronomer	Geologist	Historian	Meteorologist
The probe could be on the following planets:	The probe could be on the following planets:	The probe could be on the following planets:	The probe could be on the following planets:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
The reasons I make these recommendations are:	The reasons I make these recommendations are:	The reasons I make these recommendations are:	The reasons I make these recommendations are:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Our group recommends travel to _____

The class decides to travel to _____

Worksheet that facilitates small group discussion and decision-making

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USER PROFILES

EQUAL ACCESS = EQUAL OPPORTUNITY

by Leah Best-Damron

Recording for the Blind and Dyslexic is an organization located in Princeton, New Jersey that records educational printed material for individuals who have visual impairments or other disabilities that interfere with reading print. It is based on the belief that everyone has the right to have access to information so that every individual will have equal opportunities for personal growth and development. This philosophy is applied not only to the people the organization serves but also to the people it employs.

Mr. James Simmons has been a quality control checker at Recording for the Blind and Dyslexic for four years. His primary responsibility is to examine recordings prior to their being sent out. He checks for such things as sound and volume quality, if the correct material is on the tapes, and proper tape order. Mr. Simmons is himself blind and is able to complete these job tasks without difficulty. He is presently working on learning additional job skills with the assistance of specialized technology, specifically a computer equipped with synthesized speech, a flatbed scanner, a Braille printer, and a screen reader.

Adaptations for a Blind Computer User

The Hewlett Packard *SCANJET IIp* flatbed scanner, which scans print from books, documents, letters or memos is used in conjunction with *OsCaR* optical character recognition software from the Telesensory Corporation to provide auditory access to printed materials. Mr. Simmons uses a Portathiele Braille printer to emboss departmental memos from e-mail which can then be given to other colleagues who are visually impaired. The translation software which converts the standard ASCII text into Grade 2 Braille is *Duxbury Translator* for IBM PC's from Duxbury Systems Inc.

Mr. Simmons uses the *Vocal-Eyes* (GW Micro, Inc.) program as his screen reader. The speech synthesizer that works in tandem with *Vocal-Eyes* is *DECtalk* from the Digital Equipment Corporation. The computer itself is a 486dx IBM compatible with 4MB RAM. The vendor for the entire package was Sighted Electronics, and it was obtained through the New Jersey Commission for the Blind.

Mr. Simmons is being taught to use the equipment with the aid of a community volunteer and employees from the Handisoft Foundation of Philadelphia. He is learning DOS and Word Perfect.

Interestingly, the technology that Mr. Simmons now works with was a response to the positive results seen with another individual with visual impairments who was a relatively new assistive technology user. Mr. Joseph Sikora, like Mr. Simmons, started in the quality control department. Through the efforts of people from Recording for the Blind and Dyslexic and the Pennsylvania Commission for the Blind, he was able to obtain a refreshable Braille display and voice synthesizer equipment. Because his access to information increased dramatically and because the technology afforded him the opportunity to gain new vocational skills, he was able to progress to a customer service position. As a result of this success, Recording for the Blind and Dyslexic focused their efforts on James Simmons and set out to obtain assistive technology for him so that he could also have access to new opportunities.

Although Mr. Simmons is mild mannered and understated, his intense appreciation for the information, independence, and new job skills afforded him by the technology is apparent. He discussed how he did not fully address his own needs when he was losing his vision years ago or even after he lost it completely in 1982. He finally went to the Joseph Kohn Rehabilitation Center in New Brunswick, New Jersey in 1990, and they helped him obtain his job at Recording for the Blind and Dyslexic. He kept stressing the Recording for the Blind and Dyslexic "afforded me a lot of opportunity - that's what they're about."

Portable Technology at Home

Mr. Simmons explained that at home he uses *Braille 'n Speak* (Blazie Engineering) which is no comparison to the old fashioned slate and stylus he previously used. This portable device has a Braille keyboard for input and a speech synthesizer for output. Some of its features include storage capacity of up to 800 pages of Braille and word processing capabilities. Mr. Simmons primarily uses it for telephone numbers, addresses and personal memos, but he plans to use it as a notebook when he takes a computer course at Mercer County Community College later this year.

Product Information:

OsCaR
Telesensory
(415)960-0920
$1,895

Duxbury Braille Translator
Duxbury Systems
(508)486-9766
$495

Vocal-Eyes
GW Micro, Inc.
(219)483-3625
$450

DECtalk PC
Digital Equipment Corporation
(508)467-5111
$1,195

Braille 'n Speak
Blazie Engineering
(410)893-9333
$994

ΔΔ

Leah Best-Damron is a graduate student in the Department of Special Education at Trenton State College.

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A TROUBLED TEEN EMBRACES COMPUTERS

by Katherine McCandless

Ron is a 15-year-old who attends a private school for students classified as severely emotionally disturbed. The teaching staff describe him as being highly distractible, uncooperative, and disruptive. He is prone to sudden violent outbursts of temper which are both verbal and physical. Even when his temper is not out of control, he has difficulty interacting with other students as he is highly opinionated, outspoken, and insensitive to others' feelings. His academic performance is poor as he rarely completes school assignments, tends to cut classes, and habitually calls out "I'm bored!" Although he more consistently completes assignments in business education and performing arts classes, most of his teachers experience insignificant and/or problematic contributions from him.

Ron's Strengths

At times, however, Ron can be an articulate, honest, insightful, and enthusiastic young man. He will engage in pleasant and meaningful conversation, offer ideas and opinions, and welcome healthy debate. He enjoys movies and music, and has a special interest in computers. He loves to discuss what he does with computers, both in school and at home, and he often speaks of his desire to "get a decent job in the computer field" when he completes his schooling. This enthusiasm is also evident in the behavior changes which seem to be brought about by his computer use. He both controls his temper and behaves appropriately when given the opportunity to get involved in computer-based projects.

Computers Reach This Uncooperative Student

For example, Ron will go out of his way to wheel a cart from the computer lab to another classroom in order to finish a favorite project or to complete some work for a teacher. He uses the computer to write for the school newspaper and to design, write, and distribute an advertising pamphlet. He explains that this vocational project "got me thinking" that the ability of computers to communicate worldwide was "neat," and that he now wants to learn more about the Internet. He views this as an opportunity to learn about "how other people do things" and how it will "help many people understand each other." His insights are particularly significant when one considers his personal difficulties with getting along with other people.

Ron's Hardware & Software Choices

In school Ron uses a 486 computer which is equipped with *Microsoft Office* and *Print Shop* (Broderbund). His keyboarding skills are adequate, and he is proficient at using a mouse. His home computer is also an 486. It is equipped with an internal sound board and an external modem. He uses his home computer for entertainment and "homework." When asked to clarify, "What homework?" since evidence of such is so limited, he laughs.

Ron is particularly fond of computer games and graphics programs, such as *Doom* (GT Interactive), *Mortal Kombat* (Acclaim Enterprises), and *Print Shop Deluxe* (Broderbund). For practical applications he uses *Microsoft Publisher*, *Microsoft Office*, *ProComm Plus* (Interactive Communications), *Turbo Tax* (Intuit), *Automap Road Atlas* (Microsoft), and *Word Perfect* (Novell).

Like all computer lovers, his future plans are to purchase an upgraded system with a faster processor, more hard drive space, additional RAM, and a CD-ROM drive. He is reading up on "what's out there now and what will be good for a while."

Success on Computers Builds Self-Esteem

Ron is confident, comfortable, and self-assured when he is displaying his knowledge of computers. He is patient with novices and is willing to explain how something works in concise, easily understood terms. He is never intimidated by new software because "it's fun to figure out how it all works." He has definitely found an area of success and acceptance.

Computers have helped this teenager reveal abilities, interests, and self-control that his teachers did not know he had. They have led him to think about the future and possibilities for employment.

When asked why, with all these skills, talents and ideas, he does not contribute in his other classes, Ron does not hesitate to answer. He wishes that "computers were in the classrooms instead of pencil and paper!" He feels strongly that using a computer frees him up to focus on creating and to enjoy what he is doing. He wants to "make computers available for all students to use in their classes."

It is widely acknowledged that educational interventions for students with behavior disorders need to include efforts to increase self-esteem while establishing appropriate social and vocational skills. Often identifying a student's strengths and teaching to those strengths contributes to these goals. In Ron's case, it is clear that he has found his niche in computers. They have helped him reveal abilities, interests, and self-control that his teachers did not know he had. They have led him to think about the future and possibilities for employment. Perhaps, if their vocational and social potential are developed, Ron will eventually find his way in this confusing world.

ΔΔ

Katherine McCandless is a special education teacher and an alumna of Trenton State College.

TRAINING RESOURCES

THE NEW JERSEY TECHNOLOGY ASSISTIVE RESOURCE PROGRAM (TARP) OFFERS TRAINING WORKSHOPS

TARP, the New Jersey Technology Assistive Resource Program, is a federally funded grant under the Technology Related-Assistance for Individuals with Disabilities Act of 1988 (Public Law 100-407), administered through the National Institute on Disability and Rehabilitation Research, U. S. Department of Education, and the New Jersey Department of Labor, Division of Vocational Rehabilitation Services. TARP is committed to the continual development of a statewide, consumer-responsive, comprehensive system of technology related-assistance to benefit individuals with disabilities and their families.

In collaboration with Trenton State College and the Center for Enabling Technology (CET), in Whippany, New Jersey, the following workshops are being presented free of charge. To register, call the **Center for Enabling Technology at (201)428-1455.**

ASSISTIVE TECHNOLOGY WORKSHOPS

Using *Boardmaker* to Increase Symbolic Communication (Hands-on)
This hands-on workshop offers training in the use of *Boardmaker* with a Macintosh computer. Topics will include vocabulary selection, layout considerations and integrating communication into everyday activities.
Sat., Jan. 27, '96 9:30 - 12:30 Trenton State College, Trenton, NJ

Computers: An Essential Writing Tool for Students with Learning Disabilities
Computers offer students with learning disabilities the opportunity to bypass their problems. This workshop will present talking word processing and word prediction programs that empower students with learning disabilities to be full, successful participants in the classroom.
Fri., Feb. 2, '96 10:00 - 11:30 Computer Center for people with disAbilities, Shrewsbury, NJ
Thurs., Mar. 21, '96 10:00 - 11:30 Center for Enabling Technology, Whippany, NJ

Creating Customized Overlays for *IntelliKeys* (Hands-on)
Customized overlays are a powerful tool for adapting curriculum activities for children of various abilities. *Overlay Maker*, a software program, simplifies the creation of customized overlays for *IntelliKeys*, an alternate keyboard.
Sat., Feb. 10, '96 9:30 - 12:30 St. Catharine School, Spring Lake, NJ
Fri., Apr. 19, '96 9:30 - 12:30 Center for Enabling Technology, Whippany, NJ

Advanced *Ke:nx* - Creating Customized Set-ups with *Ke:nx Create* (Hands-on)
Ke:nx Create, a utility included with *Ke:nx*, permits users to customize set-ups to meet individual needs. Creating custom scans and alternate keyboards will be addressed in this hands-on workshop.
Thurs., Feb. 22, '96 9:30 - 12:30 Center for Enabling Technology, Whippany, NJ

Creating Dynamic Communication Displays (Hands-on)
This hands-on workshop offers training in using *Speaking Dynamically* and *Boardmaker* to turn a Macintosh computer into an augmentative communication device. Topics will include vocabulary selection, layout and integrating communication into everyday activities.
Sat., Mar. 2, '96 9:30 0 12:30 Trenton State College, Trenton, NJ

Using *Ke:nx* to Provide Access to the World for Children with Physical Disabilities (Hands-On)
Ke:nx is a hardware/software combination that enables the user to operate a Macintosh computer without a traditional keyboard or mouse. The *Ke:nx* interface allows alternate keyboards, switches, onscreen keyboards, and even Morse Code, to run standard software programs. This hands-on workshop will provide training in setting markers and using the various set-ups available with *Ke:nx*.
Mon., Mar.18, '96 9:30 - 12:30 Center for Enabling Technology, Whippany, NJ

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Interested in Computers in Education?

Interested in using computers to help students with disabilities?

The Department of Special Education at
Trenton State College
is pleased to announce the availability of
SCHOLARSHIPS FOR **GRADUATE STUDY**
IN
SPECIAL EDUCATION
for part-time or full-time students.

Scholarships are available for applicants wishing to pursue a masters degree in special education and who have an interest in educational technology. The Department of Special Education offers several different masters programs, including one for certified special education teachers, one for teachers who wish to become certified in special education, and one for individuals who hold no teaching certificate at all. For additional information and to request a scholarship application, call (609)771-2308, or e-mail: technj@trenton.edu.

Note: All scholarship applicants must also apply to the Trenton State College Office of Graduate Studies for admission to a masters program. Call (609)771-2300 to request an admission application.

TRAINING RESOURCES FROM NCIP

The National Center to Improve Practice (NCIP) offers invaluable training materials and networking resources to education professionals who are interested in using technology with students with disabilities. NCIPnet, their online network, is designed to enable users to discuss current special education technology issues with leading experts and to gain access to a wide range of resources. The NCIPnet software is available to interested professionals at no charge.

NCIP has also developed an excellent videotape series which illustrates how students with disabilities are using technology to improve their learning. Approximately 10 minutes in length each and accompanied by helpful print materials, the currently available videos are:

- *Multimedia and More: Help for Students with Learning Disabilities*
- *Jeff with Expression: Writing with Word Prediction Software*
- *Telling Tales in ASL & English: Reading, Writing, and Videotapes*
- *"Write" Tools for Angie: Technology for Students who are Visually Impaired*

Each video is $29.99, or the series of four is available for $89.99.

For additional information contact:
Shelly Clark
Education Development Center
55 Chapel Street
Newton, MA 02158-1060
(617)969-7100, x2387, TTY: (617)969-4529
e-mail: ncip@edc.org

ASSISTIVE TECH STUDIES AT TEMPLE UNIVERSITY

Temple University, in association with Pennsylvania's Initiative on Assistive Technology (PIAT), is offering interdisciplinary coursework in assistive technology for professionals in education, occupational therapy, physical therapy, speech/language pathology, social work, psychology, engineering, recreational therapy, and early intervention. People with disabilities and their families may also enroll. Up to six credits can be earned through completion of a sequence of one credit courses which take place on Fridays and Saturdays. Topics include: Overview of Assistive Technology; Obtaining and Using Assistive Technology in Real Life Situations; Computers and Environmental Controls; Assistive Tech for Recreation and Leisure; Seating, Positioning and Mobility for Accessing the Environment; and Communication and Telecommunication.

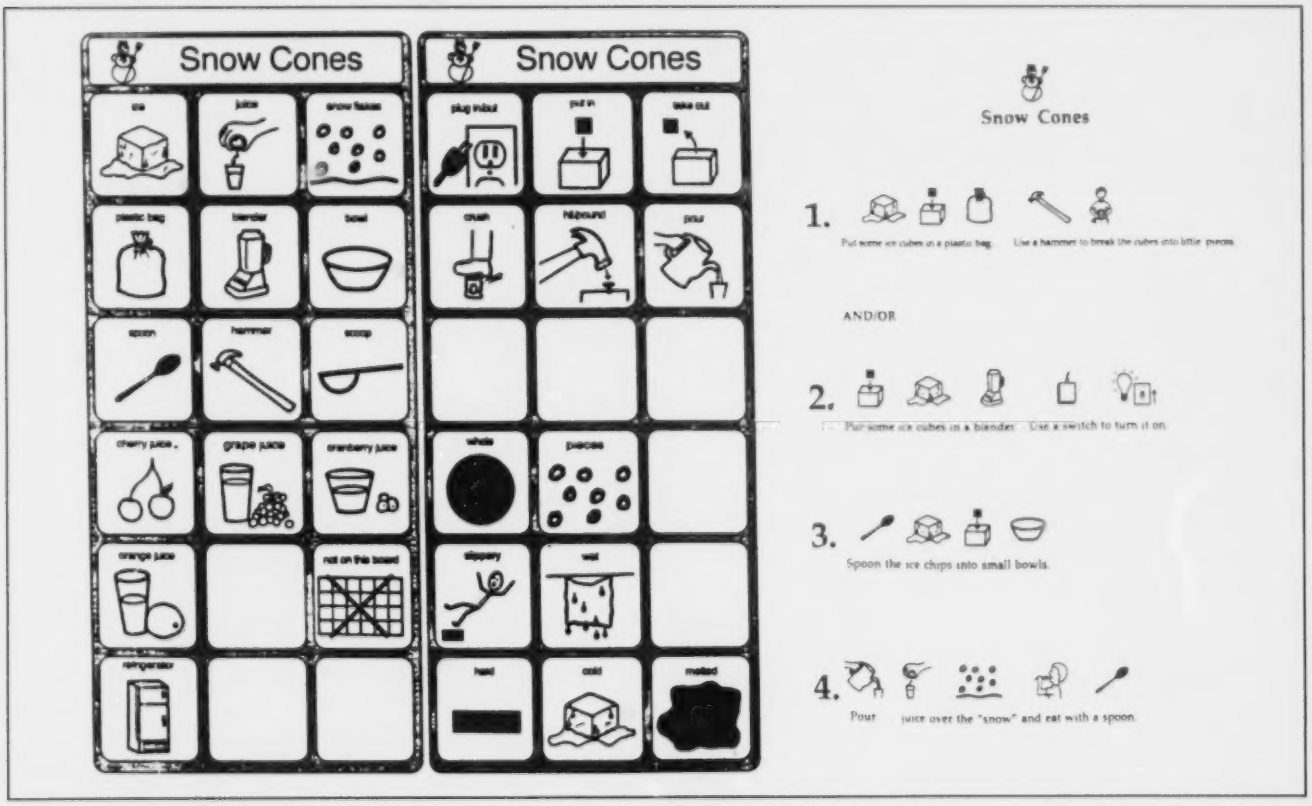
For Registration Information contact Roseangela Boyd (215)204-1356.

I CAN COOK, TOO!

A New Book/Curriculum Guide for Functional Communication

Several years ago (Spring 1990) **TECH-NJ** featured a story about using the real life activity of cooking to provide opportunities for augmentative communication users to use their augcomm devices effectively. The author of that article, Pat Mervine, then a graduate student at Trenton State College, has since gone on to become an augmentative specialist in Bucks County, Pennsylvania, and in collaboration with two other speech/language specialists, has written a book called *I Can Cook, Too!* (Mayer-Johnson).

I Can Cook, Too! is a functional language curriculum which is based on 45 cooking activities, more than one for each week of the school year. In addition to containing many creative ideas for teachers, the curriculum guide encourages early literacy skills by emphasizing the use of symbols and words in every cooking activity. One of the many ways this is achieved is that for *every* recipe the book provides sample communication cards which are to be attached to the children's placements to serve as mini-communication boards. These mini-communication boards (which use picture symbols from Mayer-Johnson's *Boardmaker* software) are designed to allow children with expressive communication impairments to participate fully in the cooking experience by pointing to symbols to make requests, to answer questions, and to direct the actions of others. The cards are also helpful for children with receptive language impairments since the visual cues often assist children with vocabulary or word finding difficulties. Sample communication cards from the Snow Cones recipe are in the box below.



I Can Cook, Too! is incredibly detailed and organized, and provides all the information a teacher or therapist might need to conduct any of the cooking/communication activities. The recipes are simple to make and are written in a way that allows children to be 100% involved in making their own snacks. Numerous ideas for follow-up activities, including lists of related children's books, toys and craft kits, and software titles, are also provided. This book meets a widely recognized need in language intervention - teaching augmentative users to truly communicate in natural environments during everyday activities.

For additional information:

I Can Cook, Too!
by Pat Mervine, Marie Mark & Michele Burton
Mayer-Johnson Co.
(619)550-0084

QUICK BYTES

OUR FAVORITE NEW SOFTWARE PROGRAMS

From Broderbund:
Dr. Seuss's ABC's (CD-ROM),the latest in the Living Book Series, is a delightful alphabet program for young children who adore Dr. Seuss's cleverness and silliness.

From Edmark:
Thinkin' Things 3 (CD-ROM) is an outstanding program which engages children, ages 7-13, in provocative problem-solving activities. We highly recommend all the games but have a special affection for Fripple Place and Stocktopus.

Trudi's Time and Place House (CD-ROM) continues Edmark's exemplary Early Learning House Series. Led by an alligator named Trudi, this program focuses on time telling, calendar skills, and simple map reading skills.

Destination: Oceans (CD-ROM) is the latest addition to the *Imagination Express* series, the writing program which provides hundreds of pictures for story illustration combined with a full-featured wordprocessing program.

From MECC:
Africa Trail (CD-ROM) is MECC's recent addition to their fantastic "trail" series (*Oregon Trail, Yukon Trail, Amazon Trail*). This time students take a 12,000 mile bicycle trek across modern Africa, planning for travel through all kinds of terrain while meeting people from many different cultures.

Opening Night (CD-ROM) is a new kind of creative writing program that takes its inspiration from the theater. Students assume the roles of playwright, scenic designer, casting agent, and director while writing and producing short plays.

MayaQuest (CD-ROM): Beginning in Cancún, students explore a variety of sites while learning the history, culture and geography of the Mayan people. An exciting new feature is that the game can be expanded by adding updates via the Internet.

From The Learning Company:
Let's Start Learning (CD-ROM): Reader Rabbit leads preschoolers through a playful world of letters, numbers, shapes, and patterns.

Treasure Mathstorm!, for grades 1-3, offers seven different activities, including time telling, counting money, and making change. Difficulty levels can be easily adjusted.

From Microsoft:
The Magic School Bus Explores the Human Body (CD-ROM) is finally available for the Macintosh. Any child who loves the Ms. Frizzle books (or the Magic School Bus TV show) will be delighted by this program.

From Optimum Resources:
A new First Steps series for young children includes *Counting and Thinking Games* (CD-ROM) and an entertaining *Creativity Center* (CD-ROM).

From Scholastic:
The *Smart Books* series of laserdiscs, which is based on quality nonfiction books for children, offers exciting learning opportunities on these subjects: the Titanic, Ellis Island, Malcolm X, and Greek myths.

In the next issue of **TECH-NJ**, look for a detailed review of Edmark's new *Strategy Games of the World*.

COOPERATIVE LEARNING

(continued from page 3)

groups use the information in these segments to decide on their choice of the precise location of the probe, and then the class again meets as a whole.

During this activity, the students enjoy the reinforcement of playing a game and interacting with each other while they use note- taking, skimming, reading and reasoning skills to fund the solution.

The Video Library

The videodisc also includes a variety of still and video clips on many topics involving our solar system. There is information on each of the planets, general planetary science, and the history of astronomy. By combining the video library and the large number of lesson plans included in the package, a teacher can extend this program beyond the probe games while continuing to take advantage of the appeal of video and real photographs from outer space.

A Single Computer Can Make Learning More Stimulating

The Great Solar System Rescue provides teachers with the opportunity to conduct an exciting class activity with one piece of equipment. The entire class can play and learn at the same time, without the constraints of "Your fifteen minutes are up. It's someone else's turn." In this package technology and cooperative learning are a winning combination.

For more information:
Tom Snyder Productions
80 Coolidge Hill Road
Watertown, MA 02172-2817
(800)342-0236

Additional Readings:
Dockerman, D. A. (1994). *Cooperative learning & technology*. Watertown, MA: Tom Snyder Productions.

Male, M. (1994). *Technology for inclusion.-2nd Edition*. Boston: Allyn and Bacon. [pp. 11-20]. ΔΔ

Lisa Gregory is a graduate student in the Department of Special Education at Trenton State College.

ONLINE EXPLORATIONS

WORLD WIDE WEB

(continued from page 1)

scientific areas and ask them questions via an electronic bulletin board. Each month *Scholastic Network* makes at least one scientist available to answer questions about his or her scientific specialty. The schedule and a biography through June 1996 are available now online. Upcoming guests include specialists in these disciplines: Animal Behavior: Wolves, Dogs, and Coyotes; Archaeology; Space & Astronomy; Ecosystems; and Oceans.

Teacher Resources

Another recommended site is the *Resource Pavilion*, located within the *Teacher's Information Network*. This site contains folders on topics such as Portfolio Assessment, Resource Room Teaching, and Special Education. The Pavilion boasts an array of experts and educational organizations spanning every field of interest waiting to answer your questions. Special Education teachers will be thrilled to note that the Special Education folder contains an extensive library of topics. The Folder also contains a message board and idea exchange opportunities. The *disAbilities Forum* is also located within this folder. This forum contains information about employment software, online chats, libraries and a separate *Assistive Technology Forum*.

Online Reference Libraries

America Online also offers an astounding array of resource and reference sources. The *Academic Assistance Center* - **Keyword: homework, aac** - is designed for children who need additional reinforcement of concepts they are learning or help with their homework. Live chat rooms where teachers are present are available as are message boards for posting of questions and comments. The *Library of Congress* - **Keyword: Library** - maintains a site on America Online. Check out the latest exhibit on the Vatican or browse through archives. *Comptons Encyclopedia* - **Keyword: Comptons** - is a living encyclopedia with various multimedia components. This site also offers an excellent introduction to the research process for beginning researchers. MEDLINE, **Keyword: MEDLINE**, the world's leading bibliographic medical database maintains a site on AOL. It consists of millions of records and abstracts from over 3,5000 medical journals from all over the world. MEDLINE is created by the National Library of Medicine, a part of the National Institutes of Mental Health. Note: Every month MEDLINE adds over 30,000 more records to their database. Access to the *Smithsonian Institute* - **Keyword: Smithsonian** - is also available via American Online.

Finally, one of the most useful sites - at least for busy graduate students - is *ERIC Online* - **Keyword: ERIC**. The Educational Resources Information Center (ERIC) is a national system designed to provide users with ready access to an extensive body of education-related literature. ERIC is supported by the U.S. Department of Education, Office of Educational Research and Improvement.

The World Wide Web

As you can see, the amount of information available through America Online is staggering but not when you realize this is only a fraction of what is available through the Internet and the World Wide Web. The World Wide Web (WWW), which can be reached through the major online services or through a direct Internet link, provides an easy way to explore the Internet. Graphical in design, the Web requires users to simply click on highlighted text to navigate to other sites. The most powerful feature of the Web is that the highlighted text (hypertext phrases) and graphics appearing on the screen contain the directions or pointers that automatically retrieve information from servers located throughout the Internet — all at the click of a button. It is an easy and efficient way to navigate around what can be a mind-boggling array of choices.

Browsing Pointers

Teachers, parents, and students are finding the World Wide Web to be an invaluable resource for all kinds of information. Most major newspapers and magazines, catalogs, and businesses, as well as many school districts, have or are establishing their appearance on the Web. Sites on the Internet usually refer to their "home pages." Today's common computer expression appears as the question, "Do you have a home page?"

Accessing a Site on the Web

Finding a home page or Web site is accomplished by using a World Wide Web browser such as *Netscape* or the one provided to America Online users. Accessing a specific site is accomplished by highlighting the command to open a URL (Uniform Resource Locator). There is a URL for each page or file on the Web. The URL tells the client software to go out and talk to the specified computer(s) or server(s) on the World Wide Web. To access a particular Web site, the user merely types the instructions in a form the browser will understand. The components of that command are as follows:

http://www.

http://www tells the pointer to use **h**ypertext **t**ransfer **p**rotocol—speak to the Internet via the special highlighted text and graphics that contain embedded instructions accessed through simple point and click commands. This command structure tells the computer to communicate via the World Wide Web.

Next, the specific site is identified, for example, Trenton State College. This part of the address indicates the server located out on the Internet and whether it is a commercial, government, military, or educational organization. The World Wide Web address for Trenton State College is **http://www.trenton.edu**. (Note: World Wide Web addresses must usually be stated in lower case letters. Some sites require specific words be entered in upper case letters.) An easy way to navigate the World Wide Web is utilizing the server Yahoo (**http://www.yahoo.com**), which is organized by subject area. The education category contains numerous subcategories that will help give your search a better direction.

Educational Sites on the Web

Global Schoolhouse, which is similar to AOL's *Electronic Schoolhouse*, is accessible via the World Wide Web (see box for educational site addresses). *Global Schoolhouse* is the division of the Global

BEST COPY AVAILABLE

SchoolNet Foundation that focuses on projects for "life-long learning" and uses the most powerful Internet tools, including live video to link K-12 classrooms to their communities and other children around the world. This site has been rated among the top 5% of all sites on the Internet by *Point Survey*, which is the leading online provider of site ratings and reviews on the WWW. Other projects available through the Global SchoolNet Foundation include: Ask a Geologist, where general questions on earth science are answered via electronic mail; Geogame, where students help create a puzzle by answering 8 questions about their community; Global Grocery List, where students visit their local grocery stores and record the prices of items on the grocery list and then share their prices with other participating classes all over the world; and finally the Jason Project, which offers students an interactive electronic field trip. The latest trip included a visit to an active volcano.

The Diary Project

The *Diary Project* is another interesting site. This project was scheduled to be launched on the Internet in late September and will feature diary entries to be published in book form as a chronicle that captures the thoughts and feelings of kids growing up at the turn of the 21st century. Sounds like an excellent creative writing project! A site that is geared towards students but will be equally interesting to educators is *Kids Web*. This site contains school subject sections that provide a list of links to information. There are also links to external lists of material on each subject which more advanced students can browse for further information. Examples of subjects include: art, drama, literature, music, astronomy, biology, mathematics, and government. Accessing one subject then offers you more detail on the information available on that subject. For example, accessing Literature then offers you information on Children's Books, Creative Writing, Fiction, Poetry, Theater and General Literature. This is an excellent resource for searching and browsing through information on the web.

Learn About Software

Information on educational software is also available online. The *Educational Software Institute Online* service, also named one of the top 5% of sites by *Point Survey*, represents, explains, and sells the world's largest and finest collection of K-12 educational software (more than 7,000 titles) from over 300 publishers. Subscriptions are also offered online.

ADDRESSES FOR EDUCATIONAL SITES ON THE WORLD WIDE WEB

Global Schoolhouse: http://gsn.org/gsn/gsh.home.html
Diary Project: http://www.well.com/user/diary/
Kids Web: http://www.npac.syr.edu/textbook/kidsweb/
Educational Software Institute Online:
http://www.bonsai.com/q/edsoftcat/htdocs/esihome/html
EdWeb: http://k12.cnidr.org:90/resource.cntnts.html
Educational Resource Guide: http://k12.cnidr.org.90/k12.html
Eric's Educational Resource Page: http://www.teleport.com/~links/
The Busy Teachers' WebSite K-12:
http://www.gatech.edu/lcc/idt/students/cole/proj/k-12/k12wel.html

Resources for Education and Technology

EdWeb is a site sponsored by the Corporation for Public Broadcasting that explores technology and the role of the World Wide Web in education. The site was named by *NetGuide Magazine* as "one of the 50 best places to Go Online." The site offers information on educational reforms and a very interesting *Educational Resource Guide*. This guide provides a collection of online educational resources available, including teacher discussion groups and administrative services, as well as lesson plans, interactive projects and interesting places for children to explore.

Another excellent resource directory available on the World Wide Web is *Eric's Educational Resource Page*. This page should not be confused with the *Ask ERIC* Home Page. The resource page provides links to various educational resource sites (including the Ask ERIC Home Page) but is updated by an individual name Eric from Portland Oregon. This site is an excellent way to begin navigating through the enormous amount of resources available on the Web; it contains links to the Global SchoolNet Foundation, the PBS Home Page, the Smithsonian Institute Home Page, the NASA Online Educational Resource, the Mark Twain Library, and the Internet Public Library.

The Busy Teachers' Website

The most highly recommended website for teachers I have come across so far has to be *The Busy Teachers' WebSite K-12*. This site is designed to provide teachers with direct source materials, lesson plans and classroom activities with a minimum of site-to-site linking. Subject matter ranges from archaeology to recess ideas. The wonderful part of this site is that it offers a table of contents which then links the user to an extensive reference directory on any particular subject. The reference directory provides all necessary addresses so that one can access the sites directly in the future. This site was named one of the top 5% of all Internet sites by *Point Survey* magazine. For teachers who do not have enough time to spend browsing the web, this site is an ideal place to start.

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Kathleen Foster and Gerald Quinn are graduate students in the Special Education Department at Trenton State College.

DISABILITY-RELATED SITES ON THE WEB

ADA and Disability Related URLs: Provides links to sites related to the Americans with Disabilities Act and other disability related URLs. http://www.public.istate.edu/~sibling/ada.html

Educational Law: Provides current texts of special education laws, such as IDEA, and impending regulations. http://www.access.digex.net/~edlawinc/

Johns Hopkins University: Provides links to special education and technology in special education. http://www.jhunix.hcf.jhu.edu/~hpwang

McMaster University: Office of Access and Ability, Hamilton, Ontario, Canada. All kinds of resources and links to both United States and Canadian disability resources. http://www.mcmaster.ca/abildocs/default.shtml3

Sonrise: Based on the Options Method, this site offers parents and professionals information on creating child-centered, home-based programs for children with autism and related disabilities. http://www.human.com/mkt/options/sonrise.html

Special Education Resource Page: Packed with projects and practical information relating to arts, crafts, and emphasis on technology. This Web site provides Internet access to schools in Far Northern Queensland, Australia. http://www.bushnet.qld.edu.au/~sarah/spec_ed/

Special Education Needs: This site is meant for anyone who has a child with special education needs. Intended to be a link to online references and groups that may be of help: parents helping parents, Down syndrome, dyslexia network, autism informa tion.
http://www.pacifier.com/~estiles/

Spectrum Center: A school program for children and young adults with severe developmental disabilities and challenging behaviors. http://www.community.net/~valley/index.html

OTHER USEFUL AND FUN SITES

Federal Government Information: Offers help in locating federal government agencies and corresponding services. http://www.law.vill.edu/Fed-Agency/fedwebloc.html

Liberty Science Center: Billed as "The Yuckiest Site on the Internet," this site teaches users "all there is to know about bugs." Their first topic, which was just launched this fall, was Cockroach World. http://www.nj.com/yucky/roaches/index.html

Outside Online: A Web travelogue concentrating on adventures such as mountain biking, kayaking, and hiking. The site contains great pictures and offers a bulletin board for adventurers seeking travel partners. http://www.starwave.com/outside/online

Princeton University: Offers a great deal of information relevant to the university, as well as surrounding communities. http://www.princeton.edu

Save the Tiger Fund of Washington, D.C.: Contains fascinating information and photographs of the five remaining subspecies of tigers left in the world. http://www.5tigers.org/savetigr.htm

White House, Washington, D.C.: Explore the White House and take a virtual tour online. http://www.whitehouse.gov

FOR BEGINNERS: GO ONLINE TO MEET NEW FRIENDS, FIND EDUCATIONAL RESOURCES & EXPLORE THE WORLD

by Gerald Quinn

Prodigy, CompuServe, America Online, Internet: You can't escape the ads and free trial offers, nor can you escape the hype about cyberspace on television, radio, in newspapers, and at the checkout counter of the local grocery store. Online services are today's buzz words with computer users everywhere.

Special educators, individuals with disabilities and their families have found that online services can expand the walls of the classroom, remove physical barriers to conducting research and meeting people, and provide information on any subject imaginable. Persons with disabilities have found that going online provides opportunities to interact with a variety of individuals from across town, around their state, and from most anywhere in the world. Parents and family members have found that numerous online support groups and message areas can put them in contact with people across the country who have similar concerns.

Basic Connection

To go online, your computer must have a means of communicating with a remote site computer. Communication between computers can occur over ordinary phone lines via modems. A modem is a small electronic device that connects on one end of your computer and on the other end to a standard telephone jack. It is the modem that translates computer keyboard strokes into sounds that travel over phone lines to a remote computer and instructs that computer to do what you want it to do.

The marketplace is flooded with modems of all types, but the key to successfully communicating with a remote computer is to transmit and receive signals at the fastest speed possible. Currently the fastest modems available commercially run at 28,800 bps (bits per second). Faster modem speeds lower connect time, and since most online services charge by the hour, the higher initial cost of a fast modem can be recouped in just a few online sessions through lower connection charges. In addition, speedier connections mean your computer will not be tied up waiting while a file transfers.

Online Services

The major online services, which charge a reasonable monthly fee, offer a variety of online activities. Bulletin boards, chat rooms, forums, e-mail (electronic mail), and "live on-stage" presentations are just a few of the ways people can connect online. Most importantly, the desire to explore, to say "hello," and to introduce yourself are the ingredients necessary to making your online time a rewarding adventure.

Bulletin boards offer the chance to pose questions, ask for assistance, read about resources, and post your own answers or resources. Often, a bulletin board posting will include an e-mail address where you can send electronic mail requesting additional information. For example, the software publisher Broderbund has a bulletin board on America Online where users can ask for or provide hints for their favorite software programs, or ideas for integrating specific Broderbund titles into their classrooms.

Chat rooms offer a different flavor and are generally tailored to individual interests such as singles, hobbies, or disabilities. These "rooms" offer instantaneous communication where individuals communicate interactively. Private "rooms" are available for more personal one-to-one conversation or small group discussions.

Live forums offer group discussions and lecture type formats. These feature experts and special guests who lead discussions on various topics. Several special interest groups establish specific topics for discussion for regularly scheduled online meetings.

Unlike conventional mail, e-mail can be received almost instantly if sent to someone who is a subscriber of the same service, from one America Online member to another, for example. Likewise, major online services enable subscribers to send e-mail to anyone in the world who has an Internet address. For convenience and speed, e-mail beat "snail mail" any day.

Just the Beginning...

Online services continue to grow, adding thousands of subscribers each week. School districts, colleges and universities, federal, state, county and local government agencies, libraries, and businesses continue to expand their presence on the Internet and major online services. As you explore online, you will encounter and become familiar with such terms as the Web, Gophers, and Veronica which are used on the Internet and other online services. Soon you'll see how these strange sounding terms can open up a whole new world of information and entertainment.

To Request Information and Software to Sign-on to Popular Online Services

America Online: (800)827-6364

CompuServe: (800)848-8199

Delphi: (800)695-4005

e•World: (800)775-4556

Microsoft Network: (800)386-5550

Prodigy: (800)Prodigy

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Gerald Quinn is a graduate student in the Department of Special Education at Trenton State College.

CHILDREN'S LITERATURE SITES ON THE INTERNET

by Barbara K. Strassman

So your kids need to read something about ducks or dinosaurs for school tomorrow, and it's well past the library's closing time. What to do? TURN TO THE INTERNET — it is open 24 hours a day! There are many children's literature sites on the Internet, some with overlapping information and others that are unique or specialized. For starters, let Winnie the Pooh take you on an exploration through **Fairrosa's World Wide Web** site. This site provides extensive booklists by subjects, great links to sites listing books by author and links to online books. If you have wondered whether *Where the Wild Things Are* is really suitable for children or whether the *Goosebumps* series is trash or literature, join the discussions posted on this site. If you only have time to surf for a short while, this should be your starting place.

For Parents & Teachers

Another good site for parents and teachers who are searching for books for children is the **Children's Literature Home Page**. This site lists children's literature by notable awards (e.g., Newbery or Caldecott) as well as by topic. A short description of each book is given. In addition, recommended reading ages are provided. If suspense is your child's interest (but *Goosebumps* isn't yours), check the Edgar Alan Poe Awards list here to find the "Edgars" awards for the best work in mystery, crime, suspense, or intrigue.

The **WWW Resources for Children's Literature Site** is exactly what the title says - a resource of links. If you want to know how often a particular Children's Literature award is given, or by whom, the link to that information is here. The site also lists conferences and "book events," as well as a link to information about prominent authors. Site visitors have the opportunity to ask noted authors questions and to read what others have asked as well as the responses given to them. At this site you can also learn what piece of children's literature is currently being filmed as a movie. Check the link for coming attractions, and you'll find that T.S. Eliot is making it to the silver screen.

Sites for Kids

KidLit Children's Literature Website is designed for use by children. It contains a varied selection of literature and art by children of various ages, as well as their reviews of popular children's books. Teachers and parents are given clear directions as to how children's work should be submitted. What better way to show children how we write for authentic audiences, not just for the teacher!

Another site aimed at children is **The Children's Page**. Kids are invited to review books that they have read and are given links to other sites that may be of interest to them. The page is "kid-funny" and provides many creative places for children to explore.

A Good Place to Start

Yahoo (an easy-to-use server) also has a web page on children's literature. For those unfamiliar with net surfing, this is an easy place to start. The Yahoo site contains links to some of the sites mentioned previously, as well as to many other informative sites.

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ADDRESSES FOR CHILDREN'S LITERATURE SITES ON THE WORLD WIDE WEB

Fairrosa's Web Site: http://www.users.interport.net/~fairrosa/cl.index.html

Children's Literature Home Page:
http://www.parentsplace.com/readroom/childnew/index.html

World Wide Web Resources for Children's Literature:
http://athena.english.vt.edu/UG _Curric/Upper_Level/Childrens_Lit/ChildrensB.html

KidLit Children's Literature Website: http://mgfx.com/Kidlit/

The Children's Page: http://www.pd.astro.it/locat-chi-bin/kids.cgi/forms

Yahoo's Children's Literature Page: http://www.yahoo.com/art/literature.children

Barbara K. Strassman, Ed. D. is a faculty member at Trenton State College and is coordinator of the Deaf and Hard of Hearing Program.

SOFTWARE REVIEWS

A.D.A.M. ESSENTIALS

by Lois Mason

SUBJECT AREA: Science or Health

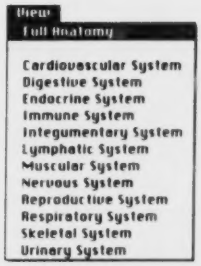
PUBLISHER: Broderbund
(800)521-6263

COST: $199.95 List Price (School version)

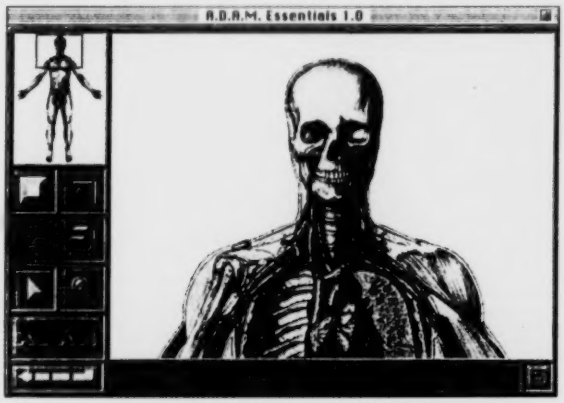
INTENDED AUDIENCE: Grades 9 through 12

mouse click gains detailed, exploratory access to the human body's structures, systems, and functions. Male or female gender can be selected, and by using an on-screen pointer as a "scalpel," the user can choose from a variety of options including: skin tone, anterior or posterior view, full view or sectional view (upper, middle or lower), and a magnifier to enlarge a particular structure.

A Depth Bar dissects a full anatomy image. Dissection is layer by layer, from skin to bone. The image can also be restored layer by layer back to the skin. Animations provide narrated, multimedia presentations regarding selested system functions or body structures.



Choose either Full Anatomy or any System Anatomy from the View menu. When Full Anatomy is chosen, the contents area shows A.D.A.M. or E.V.E. with all systems. This mode allows dissection and the choice of anterior or posterior views, gender, and skin tone. Choosing System Anatomy highlights the selected system, with the rest of the anatomy dimmed.



REQUIRED HARDWARE: Macintosh 68030 processor/ 16 Mhz or greater, System 7.1 or later, 8 MB RAM, hard disk with 40 MB available, 9" color monitor displaying 256 colors, double speed CD-ROM drive, and mouse. IBM version also available.

OPTIONAL HARDWARE: A 14" color monitor displaying 256 colors, additional hard drive memory space, and a faster processor will improve performance. A *TouchWindow* can provide alternative input for children with disabilities.

EDUCATIONAL GOALS: To develop an understanding of the human body - both structurally and functionally.

DESCRIPTION: The A.D.A.M. (Animated Dissection of Anatomy for Medicine) Scholar Series lets students perform "virtual dissections" on the human body. *A.D.A.M. Essentials*, the high school version in the series, is a multimedia CD-ROM that offers a unique way to learn about human anatomy. This easy to use program contains a lot of information. A simple

STRENGTHS: *A.D.A.M. Essentials* is an easy to use, detailed, visually and auditorily engaging program. The user can thoroughly probe, discover, question, and understand the structures and functions of the human body. An extensive, accessible help menu offers on-screen support.

WEAKNESSES: The "Magnify" tool may enlarge some of the structures to the point of graininess. However, the value of this tool far outweighs its weakness.

Installation of this program into older model computers still in use in many classrooms may be prohibitive due to memory requirements.

SUMMARY: *A.D.A.M. Essentials* is an engaging, easy-to-use multimedia exploration of the human anatomy. It is the next best option to hands-on dissection.

Lois Mason is a graduate student in the Department of Special Education at Trenton State College.

WHERE IN SPACE IS CARMEN SANDIEGO?

by Niki Marrazzo

SUBJECT AREA: Science, with emphasis on Astronomy

PUBLISHER: Broderbund
(800)521-6263

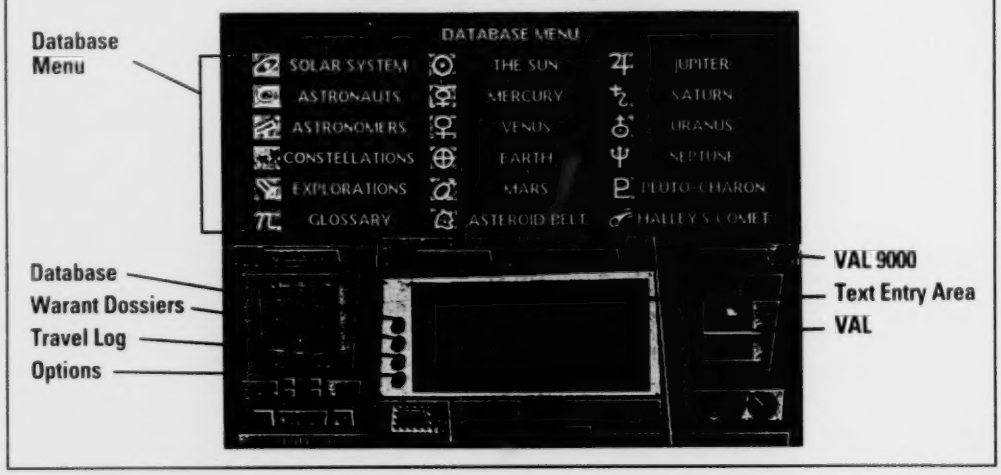
INTENDED AUDIENCE: Ages 12 and up

REQUIRED HARDWARE: 8-bit color capability Mac monitor (256 colors or shades of grey); color or grey-scale monitor; hard disk with 11 MB free space; 4 MB RAM with 2.5 MB available; 1.44 MB ("high-density") 3.5 floppy disk drive; system 6.0.7 or higher. IBM version also available.

EDUCATIONAL GOALS: To familiarize students with the solar system, while developing critical thinking and data collection skills.

STRENGTHS: This program provides an excellent format for group work, allowing students of differing abilities to combine their strengths to capture alien criminals. Aside from broadening their understanding of the solar system, students also get a chance to enhance their knowledge of literature, history and mythology. Students practice research skills when they use the on-screen database which includes an easy to use "find" feature. The VAL 9000 computer is an in-depth encyclopedia which not only provides users with textual information, but provides NASA photographs of many of the planets and their satellites.

The VAL 9000 Computer



DESCRIPTION: Following the engaging format of the *Carmen Sandiego* series, *Where in Space is Carmen Sandiego?* takes students on a rocket ride to the far reaches of the solar system. This time Carmen's colorful gang is made up of alien beings. In place of the usual reference book, students have access to an on-screen database which provides historical, scientific, and mythological information on the planets, their moons, and other bodies in our Solar System. The "VAL 9000" computer provides facts on constellations, astronomers and astronauts, and information which is needed to successfully solve crimes.

Hanover Fist, One of Carmen's Gang

Gender: Male
Number of Eyes: Many
Feature: Hair
Locomotion: Fly
Favorite Writer: H.G. Wells
Favorite Astronomer: Galileo Galilei
Favorite Food: Toxic Waste

With names like "Kit Incaboodle" and "Morton U. Bargandfore," and physical characteristics such as scales, multiple limbs and/or eyes, Carmen's gang members are not only slippery, but they are a clever, entertaining addition to the series.

WEAKNESSES: Because the program involves a fair amount of reading, students with visual impairments or learning disabilities may need adaptations such as screen-reading programs.

SUMMARY: Where in Space is an entertaining and humorous program that will keep students playing long after the lesson is over. It may even entice many adults to try their hands at galactic detective work.

Niki Marrazzo is a graduate student in the Department of Special Education at Trenton State College.

LEARNING ENGLISH: -HOME AND FAMILY -NEIGHBORHOOD LIFE

by Jeffrey Gavin

SUBJECT AREA: Development of English language proficiency.

PUBLISHER: Hartley, Inc.
(800) 247-1380

COST: $79.00 list price (each)

INTENDED AUDIENCE: Ages 4-Adult

APPROPRIATE FOR: Students learning English and/or life skills.

REQUIRED HARDWARE: Mac LC, 12" color monitor, CD-ROM drive, 4MB of memory (5MB recommended), System 7. An IBM Windows version is also available

OPTIONAL HARDWARE: Microphone (required for voice recording capability), printer.

EDUCATIONAL GOALS: To help students become proficient in the English language while becoming familiar with American home and community activities. Theme vocabulary and language construction is learned through activities that allow practice in specific contextual situations.

DESCRIPTION: Two CDs provide 13 situational learning activities.

HOME and FAMILY:

1. "It's The Weekend": Provides a conversation describing weekend activities.
2. "Who is Uncle Roberto?": Provides practice in choosing and describing facial features.
3. "Moving In": Describes rooms and furnishings in a house through a moving exercise.
4. "Saturday at the Brisco House": Describes household cleaning activities and chores.
5. "Welcome to Burger World": Simulates the experience of working in a fast food restaurant, including dealing with money exchanges.
6. "What's for Dinner?": Gives options for making dinner choices.
7. "Stop and Shop": Simulates a trip to the supermarket, using a grocery list.

NEIGHBORHOOD:

1. "The Money Machine": Provides simulated practice using an Automated Teller Machine.
2. "An Expensive Day": A conversation among family members leads to plans for a trip to the mall and movies.
3. "Meet You at the Mall": Provides a simulated shopping trip to the mall with choosing stores, exchanging money, selecting a movie, and purchasing tickets.
4. "Extra! Extra! Read All About It": Provides practice reading articles for content to match the appropriate headlines and photos.
5. "A Quiet Afternoon In Cornerstone?": Gives a picture of the buildings and people in the community.
6. "Search For The Missing Map": Teaches about the different sections of the library.

STRENGTHS: The activities in this program provide stimulating situations for practice in becoming more familiar with conversational English. The graphics and auditory feedback are motivating and reinforcing. These features make the program accessible to poor and non-readers. The activities are untimed and can accomodate a wide range of levels.

A student monitoring system is a nice built-in feature.

The "It's the Weekend" activity provides an example of an afterschool conversation among three friends.

WEAKNESSES: Some of the activities may take too long time for lower functioning students to complete. While younger children can benefit from hearing conversations and seeing situations, the activities themselves are geared more to older students.

SUMMARY: *Learning English* provides realistic situations and conversations in which students can become more proficient in the English language. The program is appropriate for students in a life skills curriculum.

Jeffrey Gavin is a gradute student in the Special Education Department at Trenton State College.

A TO ZAP!

by Debra Bihler

SUBJECT AREA: Early learning

FORMAT: Open-ended activities and games

PUBLISHER: Sunburst/Wings for Learning
(800) 321-7511

COST: $79 (CD-ROM version); $65 (Disk version).

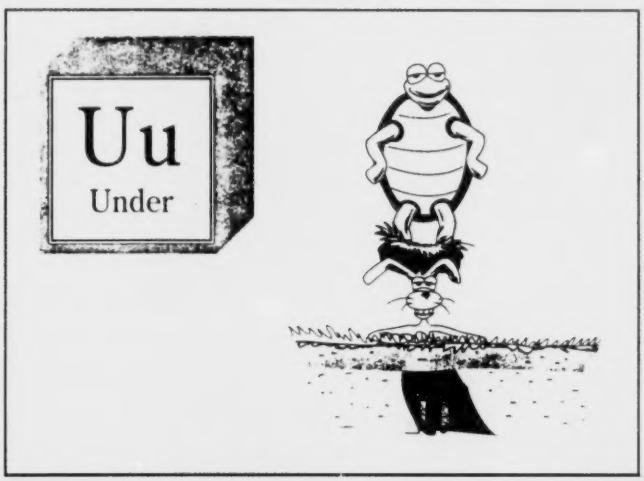
APPROPRIATE FOR: Preschool to Grade 1

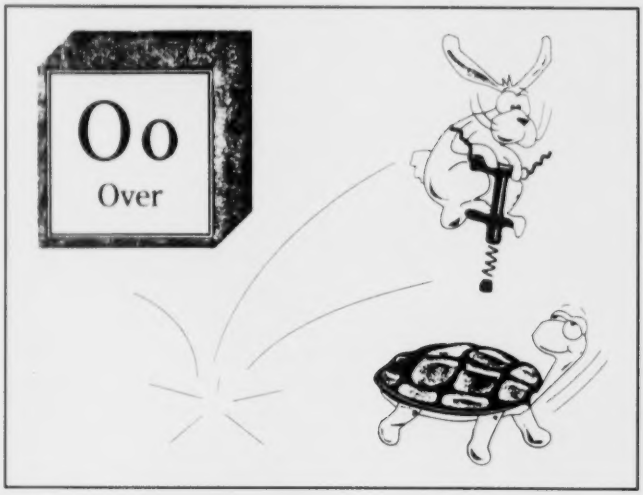
REQUIRED HARDWARE: Macintosh disk version - 2MB RAM (4MB for System 7.0 or higher) and color monitor. Macintosh CD-ROM version - 68040 CPU, System 7.0 or higher, 13" color monitor, and 5MB RAM for System 7.5. Power Macs require 8MB RAM.

Windows 3.1 or higher: 8MB RAM, 486 CPU, VGA graphics, and sound card are required. SVGA graphics and double-speed CD-ROM drive are recommended.

DESCRIPTION: *A to ZAP!* is a comprehensive early learning package that is designed to teach letters, numbers, and words. It also incorporates the teaching of opposites, shapes and colors. The activities are presented by The Sunbuddies™, humorous animated animals. They interact with the students through colorful graphics, sound, speech, and music.

As a basic exercise, students can learn to recognize the letters of the alphabet by clicking on a letter and hearing it called out in a real child's voice. On a more advanced level, they can combine letters to spell words. There are 26 activities and games that are tied directly to a letter and a word. Some of these activities use a variety of tools. These tools can make letters disappear and return, change from upper to lower case and then back again,





change color, brighten or darken, jump, or sing a song. For example, when you click on the letter "W," students can use a wind cloud to blow letters. A short puff moves the letter slightly, while a long puff will blow it off the screen with corresponding sound effects.

STRENGTHS: *A to Zap!* requires minimal instruction and allows for flexibility. A Preferences Option lets the teacher to customize the program in several ways. Words can be presented in all upper case letters, all lower case letters, or a combination. New words can be added, with pronunciation, very simply. Students can work at their own pace and in any order they choose. A nice feature for teachers is the ability to capture any screen at any moment and print it for off-computer activities.

An outstanding curriculum guide provides teachers or parents with numerous creative ideas for integrating the software into the learning environment. It offers related activities to reinforce the concepts presented in the program, and it gives suggestions for helping students interact with each other and make the most of the software.

WEAKNESSES: The sound and animation, while superior, may be distracting for some students.

SUMMARY: *A to Zap!* is an excellent program for children to explore a wide range of early learning concepts. The funny Sunbuddies™, amusing graphics, and entertaining animation should keep children actively engaged. This is a well-designed package that provides children and teachers/parents with unlimited learning opportunites.

Debra Bihler is a graduate student in the Department of Special Education at Trenton State College.

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See pages 6 & 7 for local training opportunities.

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Technology, Educators, & CHildren with disabilities - New Jersey

Trenton State College School of Education
Department of Special Education

Spring/Summer 1996, Vol. 7. No. 2

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LD CLASS JOINS BALLOONIN' USA VIA THE INTERNET

by Kathleen Foster

When is he coming? Is he coming today? Can we check our e-mail? The same questions greeted Pam Getchis as she began her 1pm class every day. Pam, a graduate student in Special Education at Trenton State College, was doing her student teaching at Greenbrook Elementary School in Kendall Park, NJ. The children asking the questions were resource room students assigned to Special Education teacher Lavonne Slusher. "He" was balloonist Kevin Kuehn. The story of how they all got together begins in a chat room on *America Online*. Ms. Slusher first heard about the project through an online chat for educators she participates in on *America Online*. Another teacher asked if anyone was participating in a Ballooning project offered through the Internet for the 95-96 school year. After receiving information about the project Ms. Slusher decided to become involved.

The project, Balloonin' USA, was the brain child of school administrator Kevin Kuehn. Billed as the world's first "interactive hot-air balloon trek," the project was designed to allow students and teachers to follow the balloon's flight across the United States through daily updates and photos available on the Internet. Schools were also invited to fully participate in the project by submitting their school as a possible landing site for the balloon. Kevin Kuehn planned to visit all 50 states during his journey.

The children at Greenbrook Elementary School await the arrival of Mr. Kuehn's balloon.
(Picture designed using Storybook Weaver Deluxe - see software review on page 22.)

The Students Present Their Case

The students at Greenbrook Elementary School composed a letter to Mr. Kuehn highlighting the reasons why they considered their school an ideal launch site. Reasons included the proximity of the area to both New York City and Philadelphia, and the available soccer field, safe for landing and launching because there were not many wires or trees.

The letter was only the beginning of a semester long project that sparked the creative talents of these learning disabled

(continued on page 14)

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TECH-NJ: Technology, Educators, & CHildren with disabilities-NJ

TECH-NJ is an official publication of the School of Education, Department of Special Education at Trenton State College. It is written by students and faculty and is designed to support professionals, parents, and computer-users in their efforts to use technology to improve our schools and to enhance the lives of people with disabilities. In order to facilitate local networking, emphasis is placed on resources and innovative parctices in and around the New Jersey region.

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TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

Volume 7, Number 2

EDITORIAL

That Important Connection

Although developments in computer technology continue to be exciting and promising, the goal of integrating technology into the curriculum remains elusive in many schools. We still see too many classrooms with their two or three computers in the back of the room which children get to use once a week during their "assigned computer time." The computers are vastly underutilized, and the children are not benefiting from technology's potential to enhance the teaching and learning process.

This issue of **TECH-NJ** focuses on that important connection between technology and curriculum. We want to make technology integration happen. To that end, this issue provides practical suggestions for weaving technology seamlessly into classroom activities. The cover story describes how an intriguing project on the Internet - Balloonin' USA - is being implemented in an elementary resource room in New Jersey to enhance the teaching of reading, writing, and organizational skills to students with learning disabilities.

The stories on page 3 and 12-13 feature practical ideas for making typical classroom activities accessible to students with physical disabilities. Several custom-designed overlays for *Intellikeys* and scanning arrays for *Ke:nx* are presented. These custom set-ups were designed by students in Trenton State College's assistive technology course to enable students with physical disabilities to actively participate in test-taking, algebra class, a cooperative learning assignment, and joking with friends.

A special feature of this issue is a column on technology resources for students who are deaf and hard of hearing. Two software programs with particular relevance to deaf students are reviewed (page 11), and a school which is using the IBM Speech Viewer II to help deaf students improve their speech intelligibility is profiled (page 10).

We are also pleased to introduce to our readers an unusual assistive device from England called the *MIDI Creator*. This product makes music accessible to people with disabilities. The article on the *MIDI Creator* (page 4) was written by a TSC graduate student who is a trained musician and a public school music teacher, and it includes a field-tested lesson plan for creatively using the *MIDI Creator* device in classes.

We hope these examples of classroom applications help make technology integration happen in your school.

A.G.D.

CLASSROOM APPLICATIONS

CUSTOMIZED SCANNING ARRAY FOR CURRICULUM INTEGRATION

by Amy Stollsteimer

Jacob is a 12-year-old sixth grade student. He was in an automobile accident and sustained injuries that caused severe physical disabilities. He remains a student in a regular education classroom with the help of an in-class support teacher. Jacob prides himself on being an honor roll student and doing all that his peers do.

His class has been studying the New Jersey Conservation Foundation's *Songbird Connection* curriculum. The *Songbird Connection* curriculum introduces songbirds, explains their migration from tropical to temperate habitats, and demonstrates the importance of New Jersey's forests in their flight path. The curriculum also provides activities and resources to engage learners in environmental protection efforts.

Main Scan for Songbird Curriculum

Fruit: Nature's Treat

Apple	Avocado	Bayberry	Blueberry	Dogwood
Gooseberry	Juniper	Peach	Pear	Persimmon
Raspberry	Sassafras	Spicebush	Strawberry	Watermelon
Fruit Color: (branch)	**Fruit Size: (branch)**	**Seed size: (branch)**	**Therefore, eaten by (branch)**	
Return	**Delete**	**Save**		

Adapting the Lesson

Jacob's class is grouped for cooperative learning and will complete the "Fruit: Nature's Treat" lesson. This lesson calls for the students to investigate 15 fruits. The groups will inspect the fruits' skin color and size, examine the pulp and seeds, compare the seeds of the fruits, and hypothesize whether the fruit is eaten by birds or by mammals. Given the nature of Jacob's disability and his lack of fine motor movements, it is necessary to adapt certain aspects of the lesson. In order to maximize Jacob's learning and the learning of the other members of his group, Jacob's in-class support teacher considers the following: what Jacob (and his group) need to do to meet the lesson objectives, what technology might be of assistance to Jacob, and how technology may be integrated and shaped to complement the lesson.

Jacob's group needs to work together to achieve the overall objective and each group member must, in turn, perform a specific role. The whole group will visually examine the fruits and formulate one set of hypotheses. Individual roles within the group may include material gatherer, fruit cutter and hands-on examiner, reporter, and presenter. Technology will give Jacob the ability to perform the role of reporter in this lesson.

How the Scan Works

Using a wordprocessing program, a single switch and a customized scanning array desogned by his teacher with *Ke:nx Create* (Don Johnston Incorporated), Jacob will document the group's observations and hypotheses during the "Putting It All Together" activity.

In designing the scanning array, Jacob's in-class support teacher considered the lesson objective, procedures and evaluation, and Jacob's abilities. This scanning array must function as a log so that as the group examines each fruit, Jacob can document their observations and hypotheses by hitting the switch.

The scanning array was designed with several branches. This way, Jacob will not have to scan the whole array each time he makes an entry. The first three rows of the array alphabetically list the fruits Jacob's group will examine. The fourth row of the array includes buttons that document the exploration of the fruits: fruit color, fruit size, seed size, and the introductory phrase of the hypothesis, "Therefore, eaten by." Each of these fourth row buttons triggers branches that can then be scanned to complete the observation or hypothesis. The fifth row of the array contains the function keys (Delete, Save, and Print). The following is a list of arrays used with this lesson:

Main Array: Fruit
Branch 1: Fruit Color
Branch 2: Fruit Size
Branch 3: Seed Size
Branch 4: Hypothesis

Since Jacob is an able reader, he does not need pictures in his array. Appropriate punctuation, spacing and returns are included in each key content so that the number of switch presses is minimized. For example, when Jacob chooses "Therefore, eaten by" as the beginning of a hypothsis, the wordprocessing program writes "Therefore, the fruit is eaten by <space>." Jacob next selects "birds," "mammals," or "birds and mammals" to complete the hypothesis.

The report Jacob produces for his group will contain 15 entries. The first entry may resemble the following:

Apple
Fruit color: red
Fruit size: approximately 3 inches
Seed size: less than 1/4 inch
Therefore, the fruit is eaten by birds and mammals

For additional examples of customized scanning arrays see the related article on page 12.

(continued on page 15)

TECHNOLOGY AND THE ARTS

EVERYONE CAN CREATE MUSIC

by Donna Williams

"I enjoyed the *MIDI Creator* because it was amazing and fascinating to me. I never knew that there was such a thing like that until now, and I hope that we will get another chance of playing this again." C.C., grade 6.

"*MIDI Creator* was fun because I got to see another way that people can play piano if they have a disability. They have fun like on a real piano and they can make their own music. Whoever invented this, Thanks! because one day I may need to use it if I have a disability and I can make my music ..." K.J., grade 6.

"I thought it was fun because all you had to do is just wiggle your hands, and you don't have to practice to learn how to use it. It was strange because I've never seen that object. It makes different sounds, and I especially liked the drums." A.J., grade 6.

The *MIDI Creator* is a device designed in the United Kingdom as a way to enable people with disabilities to create music. The device adapts MIDI-capable synthesizers in two ways: it allows a person to use up to fifteen switches to operate a synthesizer, and it offers several settings which provide different groups of preset pitches, according to various scales and chords. It is a small device, about 4x6x1 inch, with a small, digital setting display on the top. You will need to provide your own sound source; any MIDI-capable keyboard will do. The *MIDI Creator* uses standard numbers for various sounds, so if your keyboard is old, the numbers won't match and it will use default settings. (To translate, if your keyboard is old, the *MIDI Creator* will do what it feels like to make the sound come out!)

Creating Pitches

According to the kind of switch used, the setting chosen, and the sound that is selected, you will get different responses. A *Jelly Bean® Switch* (Ablenet), for example, will give a single pitch each time it is pressed. With a number of settings, you can get arpeggios when you employ a sensor, or proximity, switch. These switches work proportionally, meaning that the pitch goes up or down depending on how high or low your hand is over the switch.

A proximity switch that is designed to work with the *MIDI Creator* is the *MIDI Gesture*. It sends out a beam, which when broken by a hand, will play a pitch that is high or low depending on the hand's proximity to the source. (While this switch is great, I would love one that worked in an area wider than a beam or an index card; I think it would be great therapy for a child to experience spatial awareness, as well as cause and effect, through movement and sound.)

Student Reactions

As a music teacher in an elementary school, I designed a general music class around this unusual device. My students really enjoyed their experience with the *MIDI Creator*. L.S., a sixth grader, liked the fact that everyone got to use it. M.H. liked it because "people who are unable to use their arms...can use their mouth or something else like their head...They need more things like that for people who are unable to use parts of their body." Many students liked the way they made the sounds with their hands. C.B. felt like he "had control of the keyboard." N.J. thought it was "cool when you get close it just starts playing notes. This invention is great for someone who can't use their fingers."

The proximity switch was a favorite because it played many notes instead of just one and it did not have to be touched or hit to produce a sound. R.M., a fifth grade student, said it is "cool because if you touch it, it does nothing, but if you go near it then it sounds...You move your fingers near it [and] it sounds like you are [playing] the piano for real." K.S., a sixth grader, said "You can make it like it was fairy dust."

If Price Were No Object

While I recognize the potential of this device as an introduction to both music technology and assistive technology, I do have some concerns. The switches available to me did not allow for drumming or very percussive playing. All button-style switches played a single, decaying pitch. If this is to be used with children, I would recommend very sturdy switches that can take a lot smacking. Also, be aware: fifteen switches means many wires hanging all over the place. This also affects portability.

Price is another concern. Since it is an import, every American-made switch needs an adaptor cable. Without it, the sound comes at release instead of when the switch is "pressed." Each twelve inch adaptor costs $15. The *MIDI Gesture* and the *MIDI Creator* cost around $500 each. This is not including the cost of the switches themselves, or the sound source. Also, external speakers are needed if your sound source has none. But, if price were no object, I would be ordering a *MIDI Creator* and several proximity switches for my music classes tomorrow.

Classroom Application

The lesson plan on the facing page was designed to introduce the *MIDI Creator* to a class. As a suggestion, in grades K-2 this plan might be used to encourage the use of vocabulary. It was hilarious to hear kindergartners explain the difference between immediate and delayed response to each other while waiting in line for their turns. This is also an excellent way to employ critical thinking skills like comparison and contrast. The device encouraged questioning and answering among special education students. The different sounds and colorful switches were interesting enough to help a number of students focus on the lesson.

In grades 3 - 6, compare the way the MIDI communicates with the way other computer hardware works together. Let students create their own pieces of music in groups, using different colored switches; they can use the colors or create their own ways to notate their creation. This can be a springboard to a unit on standard notation.

SAMPLE MUSIC LESSON USING THE MIDI CREATOR

OBJECTIVE: Students will differentiate between digital and acoustic instruments and use various switches to operate a MIDI device.

MATERIALS: *MIDI Creator*, sound source, numerous types of switches (Flat, Jelly Bean, Big Red), at least one sensor switch, table, board or chart.

VOCABULARY: digital, acoustic, MIDI, switches, controller, proximity, immediate & delayed.

PROCEDURE:

Access prior knowledge: Solicit from the class the types of switches they have at home. Examples include lights, microwaves, and radios. Next ask what they can turn on with their bodies. Examples are movement sensitive outside lights and car alarms. Explain how switches turn things on and off by pressing, pressing and letting go, or by how near you are to it.

Next, ask who knows someone with a physical disability and discuss. Remind the students how people often need different ways to do the same things, like typing, reading books, or walking. Explain that the instrument they will see was designed to help a person with a disability make music.

Introduce vocabulary: Write "**MIDI**" vertically on the board in large letters. Explain that the letters stand for the words "**M**usical **I**nstrument **D**igital **I**nterface," writing each word next to the corresponding letter. Explain that an interface is when two things talk to each other to do a job, like when a computer talks to a printer to print a story.

Next, compare an electronic keyboard to a piano. Let the students see inside the piano; it has hammers that hit the strings when you press the keys. When an instrument actually makes its sound, we say it is **acoustic**. A keyboard is a computer that remembers what an instrument sounds like and plays this "memory" when you press a key. That is why a keyboard can sound like many instruments; it has a lot of different "memories." It stores these memories by turning the sounds into numbers. Another word for numbers that the students may remember is digits. An instrument whose sounds come from a number memory is called **digital**.

Switches turn things on and off. A **controller** lets a person tell a computer what to do. The black and white keys on the electronic keyboard tell the computer memory what to play, just like the letter keys on the QWERTY keyboard tell the computer what to write on the screen. **Proximity** is how close or far away you are from something. **Immediate** means right now and **delayed** means you have to wait.

Introduce MIDI Creator: With students sitting down, show them how the switches plug into the *MIDI Creator*. The ends look like the jacks on Walkman™ headphones, and they plug right into the *MIDI Creator*. Let the students see the adaptor jack, and demonstrate how it changes the way the switch works by making the sound come when you hit the switch, versus the sound coming when you let it go.

Show the red number on the top of the *MIDI Creator*. This number is the setting, and the setting changes the notes the switches play. If you have a large sound bank on your instrument, you can show how that changes the sound each switch plays. (Model how each switch should be pressed gently, not whacked with every ounce of being!)

Show the proximity switch last. Explain that it works like a motion sensor because it only works when you get close to it, not when you touch it. Demonstrate this by moving your hand up and down over it on various *MIDI Creator* settings to get arpeggios, and then just hold the switch in your fist (sound should stop).

Personal exploration: Let students come up to the table in groups of three to five. Have each student play three switches of their choice, plus the proximity switch. Choices will vary. As each one is pressed, ask if it played immediately (when pressed) or was it delayed (when released). Hold the proximity switch while students move their hands over it to produce the sounds. (For a laugh, I put it up to each student's nose to show how anything close would produce a sound, including their heads.) Allow each child time to experiment a little. Note: it works well to change sounds while students experiment. Some bizarre sounds get great reactions.

Debrief: Review vocabulary orally, either by choral response or raising hands. Ask for the students' favorite switch, sound, etc. Ask what they didn't like. Have a student describe what each piece tells the other to do (e.g. "The switch tells the box to make a sound, the box tells the computer to make the sound it is set on, and the computer tells the speaker to play it out loud.") Elicit from students ways this instrument might be fun or helpful to people, and what kinds of people might benefit from it.

For more information about the *MIDI Creator*, contact
ProMedia
790 Bloomfield Ave.
Clifton, NJ 07012 or phone (201)779-2699.

ΔΔ

Donna Williams is a graduate student in the Department of Special Education at Trenton State College.

AUGMENTATIVE COMMUNICATION

FUNCTIONAL COMMUNICATION IN A LIFE SKILLS CLASS

by Regina Quinn

The day begins in Caroline Gormley's Life Skills Support classroom at the Albert Schweitzer Elementary School in Levittown, Pennsylvania much like in other classrooms throughout the school. The students arrive, hang up their coats and bags, and greet the teacher and the assistant, Marsha Carey. However, here is where a difference arises. Of the 12 students in the class, ages 8 - 12, four of the students proceed to get their augmentative communication devices out of their backpacks and put on their speech wallets. The whole class puts on name tags imprinted with their name and favorite symbol. The name tags help develop sight words, and the symbol is a cue for the students who use the augmentative devices to know which key to press to address that child.

A Means for Participation

Eli begins taking the lunch count, his job for the week. He uses his augmentative device to initiate the following conversation:

"Seth, come here."
"Are you buying your lunch today?"
"What do you want for lunch?"
"What do you want to drink?"
"Thank you. You can go back to your seat."

What is significant about this interaction is that before they were taught to use augmentative communication devices, these students lacked any meaningful communication skills and rarely addressed each other. Their cognitive disabilities interfered with language development, and motivating them to communicate was difficult. Now, a combination of the augmentative communication devices and a focus on integrating functional language into all classroom activities is resulting in exciting increases in communicative interactions.

A Variety of Devices

Christopher uses a *Liberator* (Prentke Romich Co.) and a *WalkerTalker* (Prentke Romich Co.). Eli uses a *TouchTalker* (Prentke Romich Co.). Bobby uses a *TouchTalker* and a *WalkerTalker*. Andrew uses *DynaVox* (Sentient Systems Technology, Inc.) and a *WalkerTalker*.

Sample Messages Stored on Students' WalkerTalkers

Wow, that was so cool!
I don't want to play.
We did something fun at school.
School was yucky today.
Don't tell me what to do.
Will you help me call someone?
That's great news.
Can I go with my friends?
I'm going to tell on you.
I can do it myself.
What's your problem?
No way, man!
Oh no, I have homework.
She really makes me mad.
He's so funny.

The *WalkerTalker* is a lightweight, portable communication device designed to be worn around the waist. It has a 16-key keyboard and incorporates *Minspeak* (Prentke Romich Co.), an icon-based vocabulary encoding system. These icons can be combined to produce hundreds of recorded words, phrases or sentences. The *WalkerTalker* is designed for individuals with limited communication needs, as a short-term device to meet the needs of specific environments, such as shopping or ordering food in a restaurant, or as a backup device.

The *TouchTalker* offers a keyboard with a flexible configuration of up to 128 keys and uses Minspeak to allow for unlimited vocabulary options. It has built-in DECtalk speech output which offers 10 age and gender appropriate voices. The *Liberator* expands upon the *TouchTalker* technology with built-in audio and visual scanning capabilities, an eight-line display, and a printer. It has four separate levels of programming for different communication environments.

The *DynaVox* uses a dynamic touch-screen display and has unlimited vocabulary selection options. It also has built-in DECtalk speech output and auditory and visual scanning modes.

Vocabulary Selection

Ms. Gormley has learned that an important strategy to get around the problem of motivating her students to communicate is to provide vocabulary which interests the students. Before programming a device, she points out, it is critical to work with the parents and the student to determine appropriate vocabulary. Favorite activities should be included. The device should allow the student to express emotions, a sense of humor, and sarcasm, if appropriate. Ms. Gormley recommends listening to other students in the school to find out what expressions are current and popular. Some of her favorites include, "Yea, no school!," "See you later alligator," and "Stop being a crybaby." See the box for a sample of other high-interest messages which are stored on the students' devices.

A Collaborative Effort Reaps Benefits

Ms. Gormley notes that it takes time and commitment on the part of the teacher, the speech/language specialist, the parents, and the students to integrate augmentative communication devices into the classroom. Much effort is required for students to learn how to use their devices to communicate functionally. Ms. Gormley attends training workshops with the parents, and she spends a good deal of prep time each week programming the devices with appropriate vocabulary. She makes a corresponding speech wallet for each student which hooks to a belt loop to serve as a nonelectronic backup to their high-tech devices. These manual backups are essential for those times when devices break or batteries run down.

(continued on page 15)

PROGRAM PROFILE

TAKING COMPUTER LITERACY PERSONALLY: CREATING CULTURAL HERITAGE STACKS

by Liesl Oberfeld

If you want to get students interested in computers, send them to Tony Latess. He is the computer literacy teacher at Orchard Valley Middle School in Washington Township, New Jersey. He has a talent for making computer use fun, interesting and meaningful for students by bringing a personal element to technology.

Mr. Latess' classroom is equipped for multimedia projects with 30 Macintosh computers - three 5200 Power PCs with CD-ROM drives, and many LCIIs, video monitors connected to computers, color and black & white printers, and a digital camera. He uses this equipment in creative ways with programs such as *ClarisWorks*, *HyperStudio* (Roger Wagner Publishing), *MicroWorlds Project Builder* (LCSI), *Tesselmania* (MECC), and *Mavis Beacon Teaches Typing* (Mindscape).

Mr. Latess' students learn the skills that will prepare them for the future. His sixth grade class learns LOGO programming. His seventh grade class learns desktop publishing. In eighth grade the students pull all of what they have learned over the years together. The projects they are working on this year include interactive maps (sixth grade), newsletters and cultural heritage stacks (seventh grade) and digital story telling (eighth grade).

Mr. Latess is not only teaching computer skills in isolation. Skills are taught as needed through work on the creative projects. Each of the projects the students work on have a personal element. The sixth grade maps encompass the students' environments. The seventh grade heritage stacks are the students' own personal family histories. The eighth grade stories are written and told by the students. The investment the students make in the projects is not only for a grade, but also for an exploration of their selves.

Creating Cultural Heritage Stacks

I had the opportunity to observe a seventh grade class work on their cultural heritage stacks. The students were given written instructions to compile an interactive HyperStudio stack about their own personal cultural heritage. Students were instructed to ask members of their families about their cultural history, and with that information the students created a five (or more) card stack. A stack is a series of computer screens that interconnect to provide an interactive report. Cards can include text, graphics, and sounds and can be manipulated easily with the click of the mouse, as one would turn the pages of a book. Mr. Latess gave specific instructions on what each card should contain.

Students were able to be creative with graphics, photography, sound and animation. Each card in their stacks could be designed according to their preferences and could reflect their tastes and personalities. See the box below for one student's project.

As I watched the students at work, I saw busy imaginations. The students created unique designs using the computer capabilities and the information about their family histories. The class was one of art, history and self-discovery. The finished products promised to be works of art, cultural history lessons and representations of self.

Mr. Latess does not merely give instruction in the use of technology. He incorporates all subjects and touches on many aspects of life. Most importantly, he teaches students to learn about themselves. In the process, he turns students on to computers. When the young people in Mr. Latess' classes enter the world of adulthood, they will be prepared for the technology that awaits them. These students will also be self-aware individuals. This will prepare them for all that life has to offer.

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Liesl Oberfeld recently received an M.A.T. in Special Education from Trenton State College.

MY LIFE
By.
Jessica Patel
Conclusion
Baroda is the part of India I lived in.
Both my mom and my dad are from India. India is near the equater so it is really hot there. India has the second largest population in the world. I have been there twice in my life. My parents were born there and lived there until they got older.
I was born in America but am bilingual anyway. I speak English and a language used in the Indian state of Gujarat called Gujarati. I do not know how to write it, however. My mom knows Hindi and Gujarati.

The title card and the first heritage card of a cultural heritage stack.

USER PROFILE

COMPUTERS HELP A CHILD GAIN CONTROL

by Helene Mann

On the first day of school, Alex, an energetic eight-year-old, wandered into my class of students who are classified as multiply handicapped. He wandered around the room, around the desks. He spun pencils, rulers, sticks, himself. He paced up and down the aisles talking to himself. As time went on his soliloquy changed. One day I heard, "That's not good listening. You have a choice, now I'm going to count to five - 1,2,3,4,5 - you didn't listen, you've chosen to go into time-out." A verbatim rendering of what I say to the children when they do not follow class rules. Any attempt to get Alex to do work met with screaming, kicking, and cursing. He rarely attempted to talk to me or the other children, and the few times he did, he made no eye contact. His behavior seemed typical of a child with autism. I decided to pull back and see what would happen if I let him do what he wanted to do. So Anthony wandered, and talked, and spun. We had a truce. I left him alone, he did not disrupt class.

A Difficult to Teach Child

One day Alex showed me a picture he had drawn. I asked him what it was. "It's a picture of a mother, Mrs. Mann. It's for you." He handed me the picture, his eyes focused above my head, and he ran away. Later that day he disrupted the class and had to be placed in the time-out area. After class I found the picture he had given me, "sh*t" and "fu*k you" scrawled across the face of it. I thought, "Can this kid spell or what!"

From that point on Alex and I were buddies. I think he liked me, and I liked him. But still he would do no work. All attempts to teach him reading, for example, failed. One day I saw him sitting on the floor with a book. I heard his voice, and I thought he was indulging in his own brand of echolalia. When I sat down next to him, he said, "Hi, wanna see me read?" and he proceeded to read, fluently and without error, a book on a first grade reading level. I got more books and discovered that Alex was able to read on a third grade reading level. When he was in the mood, which wasn't very often, we would sit on the floor and go through four or five reading lessons. He still would not join any reading group, nor do any work on a regular basis, but he was beginning to show interest in learning.

Computers Attract His Attention

Alex started to emerge when the "computers came to town." Earlier that year I had told the computer teacher at school how impressed I had been while watching my students with multiple disabilities working with computers at another school. Children with an attention span of no longer than five, ten minutes tops, would sit at their computers double that time with virtually nary a distractive whine. One day she offered me five Apple IIe computers, a donation from a local university.

What a gift! All the children showed some interest, but Alex stopped spinning, stopped talking to himself and sat at my side as we connected the computers. "Those are computers," he began. "Mrs. Mann, I like computers. Those computers, I really like them, yeah." Alex rarely asked directly for anything. "Do you want something?" I asked. He nodded his head yes. "What do you want Alex?" He looked longingly at the computer but said nothing. "Let me guess. You want to play with the computer." He smiled. "You have to ask for what you want." His eyes fixed somewhere over my head, he said, "May I play with the computer, please?"

A few days later, during reading, Alex wandered over to the group. "I want to play with the computer," he said. "If you do your reading with the group, you may play with the computer," I replied. Slowly he sat down, and for the first time, he did his reading with the group. When he finished, he ran to the computer. I loaded one of the few programs I had, *Webster Wordgame* (CBS Software), a hangman-type game. The user has to insert the missing letter in a three, four, or five letter word, depending on the level selected. The alphabet appears at the bottom of the screen, and the game is timed. Alex fell in love with the program. In the ensuing weeks he joined the penmanship lesson in the morning and the math lesson in the afternoon. He continued playing *Webster Wordgame* and reached level 6.

Appropriate Software

Eventually my class got a Macintosh LC575, and Alex and the rest of the class were able to play *Kid Pix 2*® (Broderbund), *Bailey's Book House* (Edmark), *Spelunx and the Caves of Mr. Seudo*™ (Broderbund), and the current favorite, *The Treehouse*™ (Broderbund). I have recently introduced a CD-ROM called *3-D Dinosaur Adventure* (Knowledge Adventure) to help Alex with reading comprehension. The program provides dinosaur "movies," and pictures of dinosaurs coupled with information about the dinosaurs whose picture appears on the screen. That information can be listened to as well as read. I have been using both modes with Alex. First we listen to no more than two lines of information, and then Alex takes over. He can highlight and read the lines he has just heard. Then I ask him questions about what he has just heard and read. His immediate recall, done in such a fashion, is quite good.

Alex still has bad days when he indulges in his full repertoire of inappropriate behaviors: screaming, cursing, kicking, and furniture throwing. Then he deals with time-out and learning to control himself. The difference is now he always rejoins the class, including his reading and math groups. He makes an effort, and that is quite a lot for this child.

I have no doubt that the computers in my classroom were the "carrot" that encouraged Alex to join the "race." They helped him to help himself, to gain a modicum of control over his behavior, and, not so incidentally, to acquire knowledge. Unbeknownst to him he learned about the rules of spelling with *Webster Wordgame*, logic with *Thinkin' Things Collection 1* (Edmark), time telling with *The Playroom*® (Broderbund), and how to count money after he climbed into *The Treehouse*™.

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Helene Mann is a graduate student in the Department of Special Education at Trenton State College.

RESOURCES

SENSEI®: Environmental Control System

by Kimberly Fattori

For some individuals with extensive physical disabilities it is now possible with the help of the SenSei® System to gain independence in their homes. The SenSei® System, when installed on a computer, allows individuals to control their environment without special wiring. Appliances can be accessed at the touch of a button.

The SenSei® System from Safko International Inc., based in Tempe, Arizona, was designed to make individuals with physical, cognitive, and communicative impairments as independent as possible. This is a new product in the assistive technology world and is the result of more than six years of development and field testing.

I visited Children's Seashore House in Philadelphia, Pennsylvania for a first hand look at the system. Terry Robinson, a representative for SenSei®, demonstrated how SenSei® works, it's ease of use and how it can be customized to fit anyone's needs.

According to Terry, an individual needs only two things to operate SenSei®: the ability to breathe, and the ability to see or hear. SenSei® can be operated with a variety of input modes - a track ball, joystick or any kind of single switch, including a sip & puff switch. Basically, if an individual has any type of movement, some type of device can be modified to give them access to the SenSei® System.

To operate SenSei® a minimum cognitive level of three years old is required. Before getting SenSei®, it is recommended that a basic computer with good software be purchased locally. This way service can be easily provided for the computer in the event it becomes necessary. Once SenSei® is installed on the computer, there is no need to touch it again. The individual is trained how to use SenSei® once it has been installed, and representatives are available for questions and problems.

Available Modules

The SenSei® System can be used on an IBM or Macintosh computer. It is broken down into individual modules that can be purchased according to the needs of the individual. The modules include: home module, augmentative communication module, on screen keyboard module, communications module, environmental module, media module, bed control module, text book management module, and solution series module. A full system can be purchased, but is rarely necessary.

SenSei® can be used in the home, office, or the classroom, and has individual screens for each with easy to recognize icons and pictures. Verbal icons can be used for individuals with visual impairments.

In the home, SenSei® can be used to control up to 256 electrical appliances with the help of an X-10 device. The X-10 is plugged into the wall, the device gets plugged into the X-10, the appropriate appliance gets selected from the screen, click once, and the appliance goes on or off! SenSei® can turn lights off and on, dim lights, turn the TV off and on, raise/lower volume, operate VCR and stereo equipment, place or answer phone calls, play video games, read books, adjust the thermostat, control hospital beds, set home alarm systems, and even open or close windows and doors, with the use of a carbon dioxide tank, all at the click of a button.

When the SenSei® System is used on a laptop computer, the portability of it makes it possible to use in more than one environment. The SenSei® System can do so many things it is impossible to describe all of them in this article. The system is very flexible and can be modified to fit an individual's needs. The detailed screens allow for easy access to even those who are unfamiliar with the use of computers. This makes the SenSei® System a practical solution for people of all ages.

For additional information:

Terryco
(315)451-6394

Kimberly Fattori is a graduate student in the Department of Special Education at Trenton State College.

Way Cool Software Review Project

Under the direction of Dr. Chauncy Rucker at the University of Connecticut, the Way Cool Software Review Project was launched during the summer of 1995. The intent of the project is to promote evaluation of "way cool" software by kids, teachers and parents.

Reviews are published on the Way Cool listserv and on the World Wide Web at http://www.ucc.uconn.edu/~wwwpcse/wcool.html/. Everyone is welcome to contribute evaluations using the Way Cool Evaluation Form which is available at the web site. Dr. Rucker will consider all software but is particularly interested in software that may be appropriate for individuals with disabilities.

In order to contribute one needs to subscribe to the Way Cool listserv. To subscribe send an e-mail message saying "subscribe wycool-L Your Name" to listserv@uconnvm.uconn.edu.

This is a joint project of the AJ Pappanikou Center Technology Lab at the University of Connecticut and the Chatback Trust of the United Kingdom.

Cordless Control System

AbleNet, Inc. has introduced the Cordless Control System that allows the safe and simple activation of a variety of devices while eliminating the switch cord. "With the removal of the switch cord, you can easily position a user anywhere in the room, pass a switch around during group activities and activate a moving toy," said Peggy Locke, director of education services. "There are no longer distractions caused by the switch cord, and the amount of equipment needed on the lap tray is kept to a minimum."

For more information about cordless control and other AbleNet products, call (800)322-0956.

RESOURCES FOR

IBM SPEECH VIEWER II HELPS DEAF STUDENTS TO VISUALIZE SOUNDS

by Cristen McKenna & Heather Schindler

In the Lafayette Elementary School in Bucks County, Pennsylvania, the Bucks County Intermediate Unit (I.U.) supports three self-contained classes for students who are deaf and hard of hearing. Two of the classes utilize simultaneous communication (sign and speech), while one is an auditory/oral class. A communication goal for all of the students - even those for whom sign language is their primary means of communication - is to improve their speech intelligibility with hearing communication partners.

As explained by Pat Mervine, Speech/Language Specialist for the I.U., improvements in speech production, such as better consonants, closer approximations of vowels, the correct number of syllables in a word, or more natural rhythm and prosody, enable even students with profound deafness to convey their signed and spoken message with greater intelligibility. In addition, increased understanding of sound/letter association and awareness of what those sounds look like on the lips of a speaking communication partner provide students who are deaf and hard of hearing with information that is essential for speechreading.

The challenge, however, is that since most speech sounds are not visible, children who are deaf find it difficult to imitate vowels and other "invisible" sounds, and to monitor their own pitch and volume. Ms. Mervine has found a helpful solution to this problem in the *IBM Speech Viewer II*, a software package from IBM, which enables users to see visual representations of their speech production.

IBM SpeechViewer II: What Is It?

The *IBM SpeechViewer II* provides users with feedback in the form of computer graphics and animations. The speech/language specialist models a target production, which the *SpeechViewer II* holds in memory. The student then speaks into the microphone and is able to compare his/her production to the teacher's model. The student can then tell if s/he produced a speech sound correctly, without having to hear it.

The *SpeechViewer II* works on many aspects of speech. One major section focuses on awareness. By watching visual representations on the screen, a student can become aware of sound, pitch, loudness, and voicing. For example, if the goal is for a student to be aware of sound, every time s/he makes a noise into the microphone, fish will begin to swim. When the student stops, the fish stop. For loudness awareness, the water from a whale's blow hole rises and falls according to the volume of the student's voice.

Another part of the program focuses on skill building. Here students can work on pitch, voicing, and phonology exercises. One of the games in this section is a maze in which each direction is represented by a different sound; to move throughout the maze, a student must say the appropriate sound correctly.

Equipment Requirements

The hardware requirements for the *IBM SpeechViewer II* are an IBM PS/2 (or compatible), with 640K of memory, 20 MB of hard drive space, and a DOS operating system of 4.01 or higher. The software package includes a hand-held microphone, a speaker, an M-ACPA card, manuals, and an instructional videotape. Options available include a multilingual package, an upgrade kit, and a dual headset microphone.

Two Lessons Based on the SpeechViewer II

We had the opportunity to observe Ms. Mervine conducting two speech production lessons with the *SpeechViewer II*. The first lesson involved two teenage girls who were working on their /s/ and /z/ sounds (which are produced in a similar fashion but with voicing on the latter sound). After Ms. Mervine programmed the /s/ and /z/ sounds using the Phonology section of the program, it was the students' job to practice saying the sounds. They chose a word card from a basket of cards and attempted to say the word into the hand-held microphone. When they said the /s/ or /z/ correctly, a comical monkey climbed a palm tree on the screen and dropped a coconut on the scene below.

The second speech session was with a teenage boy who was working on controlling his pitch. Ms. Mervine made use of the pitch and loudness feature of the *SpeechViewer II*. She modeled the correct sounds and words, and the *SpeechViewer II* provided a graph that showed pitch and volume. The picture of her formation of the word was frozen on the top of the screen. She then turned the microphone over to the student and he attempted to say the word correctly. By watching where the words he had formed fell on the graph, he could continuously monitor his own pitch.

Benefits of Using the IBM SpeechViewer II

The opportunity to self-monitor is one of the most important benefits of using the *SpeecViewer II*. Ms. Mervine observes that her students respond much more favorably when the computer, rather than she, corrects their speech errors. She is especially pleased to see her role changing from that of the "bad guy" who is "always correcting" her students to someone the students look to for help. The students enjoy the *SpeechViewer II*'s bright and lively animations and are motivated to work on their speech. They are gaining a greater understanding of how speech is produced and they are showing increased control over their own speech production.

Plans for the Future

Thanks to a generous donation by the Central Bucks Sertoma Club and a matching grant from the I.U., Ms. Mervine's long range plan of having *IBM SpeechViewer II*s available to all students in the county-wide hearing support programs will be realized next year. To more fully integrate it into the curriculum,

(continued on page 11)

DEAF STUDENTS

ROSIE'S WALK: An Interactive Story in ASL

by Tracey Galya

Deaf children are often at a disadvantage when using popular children's software. In addition to not being able to hear entertaining sound effects and voices, they sometimes have trouble speech reading characters on the screen and/or understanding printed captions. *Rosie's Walk* was developed by Dr. Gerald Pollard at the Texas School for the Deaf to address this need.

Rosie's Walk is the first children's story adapted to the interactive CD-ROM format that includes sign language. It was created specifically to enable Deaf children to be just as engaged interacting with an electronic storybook as hearing children can be. Based on a 30-year-old children's book, the story depicts Rosie, a red hen, and her adventures on a beautiful day. The pictures and text are accompanied by a sign language interpreter who is dressed up as a farmer.

Rosie's Walk provides many options to match children's language and reading skills. Children can choose to see the story signed in American Sign Language or in Signed English. They can have a sign repeated by simply clicking on a picture or a word in the text. They can access enrichment vocabulary in text and sign by clicking on a button called "Secret Words." Click on the frogs, for example, and the word comes up at the top of the screen, the sign is shown in the corner, and the frogs jump in for a swim.

In addition to telling the story in sign, the program includes several instructional games which focus on improving both reading and signing skills. In one fame children are asked to match a word signed by the farmer to a picture or printed word on the screen. The teacher can choose identifying nouns or prepositions for this game. One of the best activities is the one in which children can practice changing phrases from American Sign Language to English word order. For example, when the farmer signs "fence-walk-through," children have the opportunity to rearrange the words at the bottom of the screen in correct English word order - "walk through the fence." Activities like this are critical for deaf children as they need to learn the underlying grammar of the English language, as well as sign language.

Overall, *Rosie's Walk* is a rich tool for enhancing reading instruction and motivating deaf children to read. It provides bright, clear pictures, captivating animated characters, a simple text, and sign language interpretation in clear video clips. Rosie will soon be joined by a sign language-enhanced version of five Aesop's Fables. This second in the series will be aimed at middle school students and will include higher level concepts such as synonyms and contextual word understanding. These CD-ROMs represent an outstanding addition to educational software libraries.

Tracey Galya is a senior in the Education of the Deaf and Hard of Hearing Program at Trenton State College.

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IBM SPEECH VIEWER II

(continued from page 10)

she is developing a protocol for incorporating the *SpeechViewer II* modules into the developmental progression of speech acquisition.

A Helpful Resource

Ms. Mervine highly recommends the *SpeechViewer Times*, a semi-annual publication that provides an excellent tutorial and many practical tips. It includes helpful articles by actual users on how to adapt the equipment and modules for therapy with clients who have a variety of disabilities - cerebral palsy, multiple sclerosis, Downs syndrome, autism, or other conditions which affect speech. ΔΔ

Cristen McKenna & Heather Schindler are seniors in the Education of the Deaf and Hard of Hearing Program at Trenton State College.

ASL DICTIONARY ON CD-ROM

by Lisa Gregory

American Sign Language (ASL) is the third most frequently used language in the U.S., according to the National Association of the Deaf. However, most of the hearing population knows little or no ASL.

There are many books and dictionaries for use by people interested in learning more signs. Unfortunately, as anyone who has tried to use one knows, the line drawings provided in most of these books are frequently difficult to follow. The ideal solution would be to learn signs from a fluent person who is always available to show you the sign you want. This is not possible for the vast majority of us, but HarperCollinsInteractive has provided a useful approximation.

The *American Sign Language Dictionary on CD-ROM* contains video clips of more than 2000 signs. (The available CD-ROM-book combination package provides a printed dictionary containing more than 4400 signs.) The clips can be accessed by typing in the words the user wants or by browsing through the choices in 21 categories (including Health & Education and Thoughts & Feelings). When viewing a sign, the user can listen to an audio clip reading the description of the sign (which is also printed on the screen) or the user can turn off the audio for a strictly visual experience. The speed of the video clip can be adjusted, so a complex sign can be slowed down for easier examination. In addition, the video window can be magnified to twice its usual size so that small movements and facial expressions are more readily available. Concentration games and multiple choice questions are available to practice newly learned signs.

The *American Sign Language Dictionary on CD-ROM* will not replace classes in ASL. It does not teach grammar and so does not help with signing in full sentences. However, it does provide an excellent reference for anyone looking for a better alternative to printed dictionaries.

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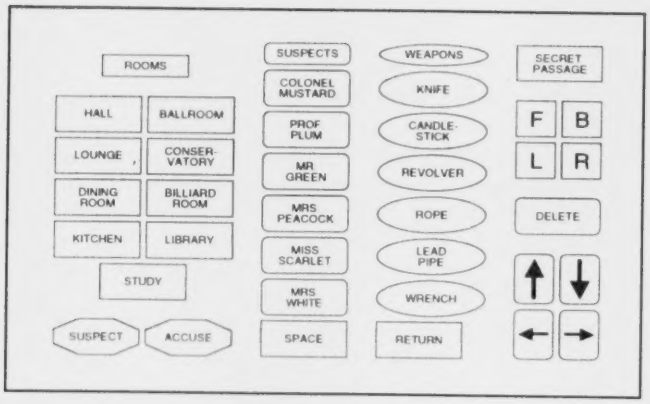
Lisa Gregory is a graduate student in the Department of Special Education at Trenton State College.

CLASSROOM APPLICATIONS

CUSTOMIZED OVERLAYS

Clue Overlay

by David Geronemo



Many children with disabilities are unable to play ordinary board games simply because they cannot manipulate game markers or write . With some games this problem can be overcome by having a non-disabled peer move the game piece or keep score. In Clue, however, it is necessary to secretly keep track of your suspicions on your personal detective note pad. Other players cannot help with this task. This overlay enables students with disabilites to keep their own records of the suspects, weapons, and rooms suspected as playing a key role in the murder case.

To use this overlay a player needs an *IntelliKeys®* (IntelliTools) and a computer equipped with *Ovelay Maker*(IntelliTools) and any wordprocessing program. If the player is non-speaking, a talking wordprocessing program such as *IntelliTalk®* (IntelliTools) can be used to enhance his/her participation.

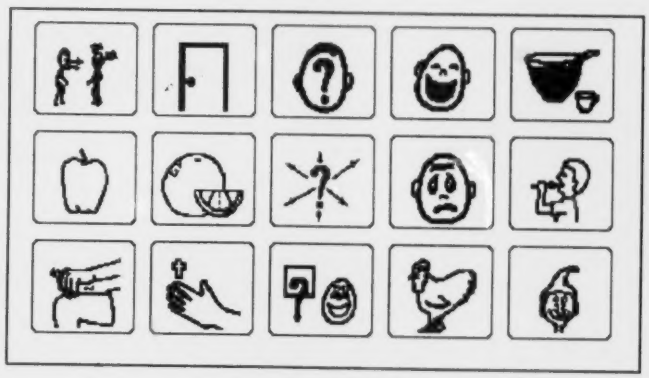
Communication Board for Telling Knock-Knock Jokes

by Danielle Nieman

Telling jokes is a favorite activity among children in elementary school. I have seen children repeating the same "knock-knock" joke over and over again to each other, and everyone laughs just as hard the tenth time they heard the joke as they had the first time. Yet, for many children who are non-speaking, the joy of joke-telling is not possible because no one has programmed their communication boards with joke-telling vocabulary.

Vocabulary for Communication Board

Message	Graphic Symbol
Do you want to hear a joke?	2 stick figures laughing
Knock-knock	door
Who's there?	face with "?"
That was funny!	laughing face
What's the punch line?	punch bowl
Apple	apple
Orange	orange
Orange you glad I didn't say apple?	"?" with arrows pointing out
Why is 6 afraid of 7?	face showing fear
Because 7 ate 9 (7-8-9)	person eating
Itch	hand scratching knee
Bless you	hand with cross
Guess what?	?" and face
Chicken butt!	chicken
You can call me Steve the joker!	face of a joker



The purpose of this communication board overlay is to allow a non-speaking child to join in when his friends are telling jokes. The vocabulary enables him to both tell and respond to others' jokes.

The overlay was produced using *BoardMaker 3.2* (Mayer-Johnson). It can be used alone as a manual communication board, or, with appropriate message storage and simple design modifications, it could be used with an electronic device such as an *AlphaTalker* (Prentke Romich).

David Geronemo and Danielle Niemann are graduate students in the Department of Special Education at Trenton State College.

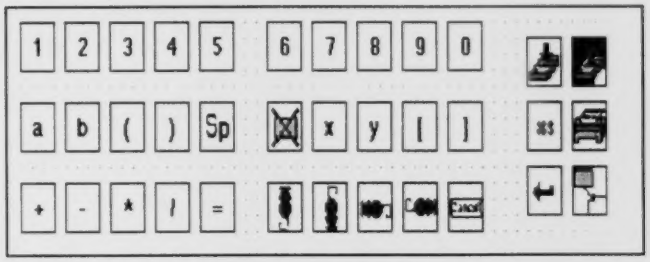
CUSTOMIZED SCANNING ARRAYS

Algebra Scan

by David Geronemo

Students with severe physical disabilities who rely on scanning as their computer access method face several obstacles when they reach high school. For example, assignments in algebra class require quite a bit of writing that is a specialized kind of writing. In addition to the numerals 0-9 and the standard computation keys, one needs a few letters to serve as variables, both parentheses and brackets keys, and the ability to write exponents. This combination of numbers, letters, and special keys is not available in any of *Ke:nx*'s (Don Johnston Incorporated) special set-ups.

Therefore, this customized scanning array was designed using



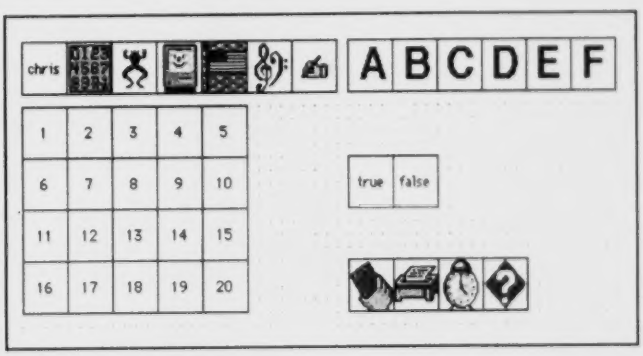
Ke:nx Create. Keys were grouped according to frequency of use in an effort to increase the scanning rate. All of the special keys needed for completing algebra problems were included. The array will work with any wordprocessing program, and users can turn in a hard copy of an assignment by choosing the print key.

Test-taking Scan

by Danielle Niemann

Another typical school activity which presents difficulties for students with physical disabilities who use scanning as their computer access method is taking tests. All too often these students depend on a teacher aide to write their answers to test questions. Students could be independent in test-taking if they were provided with an appropriate scanning array. This custom-designed array (also produced with *Ke:nx Create*) will enable a student to take multiple-choice and/or true/false tests independently and in a reasonable amount of time.

The first key, when selected, will type the student's whole name. The second set of keys allows the student to record the subject which is being tested; included are simple symbols for math (calculator), science (frog), computers (computer), social studies (flag), music (treble clef), and English (a hand writing). The numbers set is programmed so that when a number is selected the computer types the number followed by a period and a space. The answer section includes the letter A-F for multiple choice and T/F for true/false. When the student selects one of these keys, the computer types that key plus a return so that the student will be set up for the next question.



Dear Reader,

Do you have any students who need custom set-ups such as those described here? Could you use help in designing scanning arrays (for *Ke:nx*) or customized overlays (for *Intellikeys*)?

I am looking for real-life curriculum integration problems to assign to students in my course on assistive technology. If you send me your custom set-up needs, I will try to incorporate them into the course's assignments. The course will be taught from late January to May, 1997, so think about your long-term, rather than immediate, needs. Please provide the following information:

- **Who is the set-up for?** Briefly describe the person, especially his/her age, motor abilities/disabilities, cognitive strengths/limitations, visual problems, etc.

- **What is the problem to be overcome?** Describe the student's access method and the activity you are trying to make accessible. For example, "the student uses scanning and needs a scanning array that makes the times tables accessible."

- **Content:** What keystrokes and/or vocabulary need to be included in the set-up?

- **Design Considerations:** Are there any special design considerations we need to know about?

- **Your name,** school or agency, and a telephone number where you can be reached.

Send your custom set-up needs to me via snail mail (at the **TECH-NJ** return address) or via e-mail: technj@trenton.edu.

Sincerely,
Amy Dell

BALLOONIN' USA

(continued from page 1)

students. Ballooning was used as a theme to reinforce needed writing and verbal skills. To introduce the ballooning unit, the children, with student teacher Pam Getchis, used the **K-W-L** strategy to evaluate what they already **K**new about ballooning, **W**hat they would like to know, and in the end, what they had **L**earned as a result of the unit. A ballooning chart was then developed. They began a series of writing assignments all related in some way to hot air ballooning. They designed and named their own hot air balloon. They developed and maintained vocabulary books of unfamiliar words related to ballooning.

The students were also fortunate to have a parent visit their class who had personal experience in hot air ballooning. The teachers took this opportunity to strengthen the students' verbal expression and interviewing skills. Prior to the visit, the students worked in pairs to develop a list of possible interview questions. After interviewing the visitor, the children wrote about what they learned and shared their work with the class.

Students Develop Creative Writing Skills

The students also spent time working on their creative writing skills. They created an advertisement for their own Hot Air Balloon Business. They attached pictures of balloons and used a computer to complete their final draft. The students spent time strengthening their letter writing skills. They composed letters to the Ballooning Federation and regularly sent e-mail to Kevin Kuehn asking questions related to his travels.

Technology was very important to the overall success of the project. The resource room was equipped with access to America Online. The students were able to develop their computing skills, as well as learn new skills related to e-mail and the Internet. They were also able to monitor the project on a daily basis and correspond with other students involved in the project. At one point the students even participated in an online "chat" with students from California who were also participating in the project.

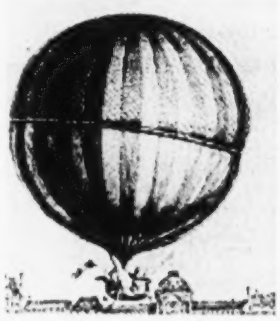
One of the final activities the children participated in was the creation of their own Balloonin' USA T-shirts. Vocabulary development and skills needed to follow directions were emphasized as the children used fabric and glue to complete their T-shirts.

The Big Day Arrives at Last

The project culminated in a visit from the pilot, Kevin Kuehn. Mr. Kuehn was going to be in the area and wanted to stop in for a visit. The children were ecstatic! After a semester of hoping, their wishes were finally coming true. Mr. Kuehn did indeed visit the school. He spent an entire day discussing the project and hot air ballooning with groups of students. He also spent time in the resource room with the students who had originally written and asked him to visit. Poor weather conditions prohibited the balloon from taking off but some of the students were allowed to stand in the gondola, the basket which hangs beneath the balloon. The visit was an overwhelming success and prompted the students to invite Mr. Kuehn back to their school if he is ever in the area again.

This project is an excellent example of how technology can increase the motivation and interest of students. These children spent a semester strengthening writing and verbal expression skills, while at the same time being completely interested in the topic. The project involved a great deal of hard work on the part of student teacher Pam Getchis and classroom teacher Lavonne Slusher but both believe the end result was well worth their efforts. The class has moved on to other projects but the bulletin board and daily Internet logs are still updated by Ms. Slusher. The children are hoping that if Mr. Kuehn comes back again the weather will allow them this time to sail up, up and away. ΔΔ

Kathleen Foster is a graduate student in the Department of Special Education at Trenton State College.



A sampling of the e-mail between the class and the Balloonin' USA project

Date: Sat., Sep 16, 1996 7:34
From LavonneS
Subj: Monday!!
To: Kevin@tie.net

.....We are a special education resource room serving LD and hearing impaired kids in Greenbrook Elementary School in Kendall Park, NJ. Our kids are really getting into this.
.....Our bulletin boards are growing with evidence of their study about hot air balloons. We have a US map showing where you are with the first mark on South Dakota. Next week ... Our kids will be writing paragraphs to explain why they think our school yard would be the perfect place for you to set down. Hope you could.....

Subj: Launch Site Preparation
Date: Dec 8, 1995 4:45 PM EDT
From: charles@sdserv.org
To: LavonneS@aol.com

Hello Launch Site Coordinator!

My stuffed mascots and I will soon be visiting your school..... Your selection as a Balloonin'USA landing site confirms that you are a leader in education. Your staff and students will become a resource for local and regional information that will be requested from students across the country and around the world via the Internet. I also hope you will use this opportunity to showcase your students' achievements .....I am confident your students will remember this event for many years. Thank you for hosting Balloonin' USA.

Soft Landings,

Kevin Kuehn
Balloonin' USA

SONGBIRD CURRICULUM

(continued from page 3)

The Songbird Connection Package

The *Songbird Connection* curriculum was developed by the New Jersey Conservation Foundation (NJCF), in cooperation with New Jersey educators and the New Jersey Audubon Society. The lessons focus on forest biology and ecology, but are cross-curricular, incorporating math, social studies, art, music, and physical education.

The curriculum package contains the following: an introductory video, 25 flashcards, 16 lesson plans for varying grade levels (k-12), three posters, and a teacher's guide that offers support as well as extension activities and resources.

The *Songbird Connection* is available at a cost of approximately $60 from NJCF, 300 Mendham Road, Morristown, NJ 07960. Telephone orders and inquiries can be made at (201)539-7540.

ΔΔ

Amy Stollsteimer recently received an M.A.T. in Special Education from Trenton State College.

FUNCTIONAL COMMUNICATION

(continued from page 6)

Ms. Gormley has learned ways to save time when problems occur with the devices. She uses a computer disk to store and transfer vocabulary files since when the batteries run down, the programming is lost. She also uses *Boardmaker* (Mayer-Johnson Co.), a software program of over 3,000 color graphics, to design her overlays and speech wallets.

Her efforts, however, have reaped many benefits in her classroom. She has seen communication initiation attempts increase as her students now have a way to express ideas and emotions. "I need to see the nurse." "I need help." "Please leave me alone."

Increased Peer Interaction

The students can now communicate with each other. Christopher likes to stop students in the hallway to say, "Hi! How are you today?" Ms. Gormley sees her students developing a greater understanding of language and observes that they are beginning to sequence icons to build longer sentences. When Seth killed a spider that the class had been watching, Christopher was overheard saying, "Seth, I'm mad at you. That was not very nice. It is dead. Spider."

The class recently began a campaign to educate the regular education staff and students of their school about their augmentative devices. Other classes visited Ms. Gormley's room to hear the four students give short descriptions of their devices and read the story *Brown Bear, Brown Bear, What Do You See?*

Christopher described his devices this way: "This machine is called a *Liberator*. I use it to help me talk. Sometimes the battery gets low, and I have to plug it in. I can do it on my own. I wear a *WalkerTalker* around my waist. I wear it all the time."

Christopher, Eli, and Bobby took turns reading pages of *Brown Bear, Brown Bear*. This experience gave the other classes an opportunity to learn about augmentative communication, see the devices in action, ask questions about them, and make some new friends.

ΔΔ

Regina Quinn is a graduate student in the Department of Special Education at Trenton State College.

AbleComm

AbleComm is a regional information and technical assistance resource project on telecommunications for persons with disabilities. Its goal is to close the gap between potential access to telecommunications and the reality of access for persons with disabilities. AbleComm is a joint effort of the Alliance for Technology Access (ATA) centers in the Bell Atlantic region.

Each center maintains a reference library in print, audio tape and computer-readable format on assistive technology and computer adaptations for telecommunications . Other services include telephone referral, training workshops and information on a variety of telecommunications products.

Participating centers are:

Learning Independence Through Computers (LINC), Baltimore, MD.
PH/FAX/TTY: (410)659-5472
e-mail: lincmd@aol.com

Tidewater Center for Technology Access (TCTA), Virginia Beach, VA.
PH/TTY:(804)474-8650
e-mail: tcta@aol.com

Center for Enabling Technology (CET), Whippany, NJ.
PH: (201)428-0558
TTY: (201)428-1450
e-mail: cetnj@aol.com

Computer Center for People with disAbilities (CCDA), Shrewsbury, NJ.
PH: (908)747-5310
e-mail: ccdanj@aol.com

Bell Atlantic

New from Edmark

Stanley's Sticker Stories is the newest addition to Edmark's popular early learning series. This MAC/WIN CD-ROM will help children ages 3-7 strengthen reading and writing skills, improve spelling and build creativity while they create their own animated storybooks featuring Millie, Bailey, Sammy, and Trudy.

Mighty Math Carnival Countdown (grades k-2) and *Mighty Math Number Heroes* (grades 3-5) are the first two titles in Edmark's new Mighty Math Series. In this series children learn the conceptual underpinnings of curriculum based math subjects by working with Virtual Manipulatives™ which help make the connection between the concrete and the abstract.

PRODUCT INFO

3-D Dinosaur Adventure
Knowledge Adventure
(available from Educational Resources)
(800)624-2926
$30.95

AlphaTalker™
Prentke Romich Co.
(800)262-1984
$1,595

America Online
(800)827-6364

American Sign Language Dictionary on CD-ROM
HarperCollins Interactive
(800)424-6234
$79.95 (includes book)

Bailey's Book House
Edmark
(800)362-2890
$59.95

Boardmaker
Mayer-Johnson Co.
(619)550-0084
$399.00

ClarisWorks
Claris
(available from Educational Resources)
(800)624-2926
$69.95

DynaVox
Sentient Systems Technology, Inc.
(412)381-4884
$3,995.00

HyperStudio
Roger Wagner Publishing
(800)421-6526
$199.95

IBM Speech Viewer II
IBM Special Needs Systems
(800)426-4832
$2,150

Intellikeys
Intellitools
(800)899-6687
$395.00

IntelliTalk
Intellitools
(800)899-6687
$39.95

Jelly Bean® Switch
AbleNet
(800)322-0956
$42.00

Ke:nx/Ke:nx Create
Don Johnston Incorporated
(800)999-4660
$780.00

Kid Pix 2®
Broderbund
(800)521-6263
$69.95 (School Edition)

Liberator™
Prentke Romich Co.
(800)262-1984
$7,345.00 - $8,575.00

Mavis Beacon Teaches Typing
Mindscape
(available from Educational Resources)
(800)624-2926
$37.95

MicroWorlds
formerly MicroWorlds Project Builder
LCSI
(available from Educational Resources)
(800)624-2926
$83.95

Midi Creator
Promedia
(201)779-2699
$500

Midi Gesture
Promedia
(201)779-2699
$500

Overlay Maker
Intellitools
(800)899-6687
$69.96

Rosie's Walk
Texas School for the Deaf
(available from Educational Resources)
(800)624-2926
$46.95

SenSei®
Terryco
(315)451-6394
$1,500.00 (Home Module)
$900.00 (AAC Module)

Spelunx and the Caves of Mr. Seudo™
Broderbund
(800)521-6263
$69.95 (School Edition)

Tesselmania
MECC
(612)569-1640
$49.95

The Playroom®
Broderbund
(800)521-6263
$59.95 (School Edition)

The Treehouse™
Broderbund
(800)521-6263
$59.95 (School Edition)

Thinkin' Things Collection 1
Edmark
(800)362-2890
$69.95

Touch Talker™
Prentke Romich Co.
(800)262-1984
$5,170.00

WalkerTalker™
Prentke Romich Co
(800)262-1984
$1,195.00

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EDITOR'S PICKS

A Passion for Art (Voyager): This magnificent CD-ROM makes the Barnes' Collection of Impressionist paintings accessible to anyone with a computer. Novices and art enthusiasts alike will be mesmerized by the beauty and quantity of Barnes' Renoirs, Cezannes, and Matisses, to name just a few of the artists represented. What is particularly wonderful about this CD-ROM is that it captures the uniqueness of the galleries at the Barnes' Foundation (near Philadelphia) - as a user, you can "wander around" the galleries as if you were visiting them in person. If one painting catches your eye, you simply click on it and the program zooms in, providing you with more information than any museum label or catalogue ever does. For children and adults with disabilities, this CD-ROM offers exciting opportunities for experiencing the visual arts. ($41.95, MAC or WIN).

Juilliard Music Adventure (Theatrix): In this beautifully sounding program, children follow their own paths in an adventure-style game, solving musical puzzles and experimenting with musical building blocks - pitch, rhythm, melody, and meter - along the way. As children play the game, they learn about music and master the tools so that they can use the tools to createtheir own music. There are plenty of on-screen prompts to make the problem-solving activities fun and motivating. A specially designed system of notation makes the program accessible to those who do not read music. Best of all, the program is filled with musical recordings of a very high quality that remind us of the transforming power of music. Children with disabilities will have access to a whole new world of musical expression with this program. ($35.95, MAC/WIN CD-ROM).

Imagination Express - Destination: Pyramids & Destination: Time Trip, USA (Edmark): These are the newest CD-ROMs in this outstanding creative writing series which enables students to "write across the curriculum." In **Destination: Pyramids** students create interactive electronic storybooks about ancient Egypt, complete with mummies, pharoahs,

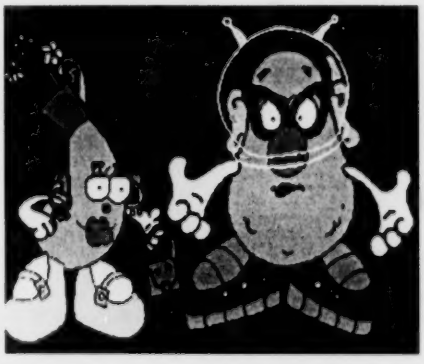
papyrus scrolls, and ancient Egyptian gods. In **Time Trip, USA** students' stories are set in a fictional New England town in the years 1640, 1776, 1865, 1929, 1945, or today. Both programs include hundreds of terrific pictures for story illustration and an online "fact book" which encourages students to research the facts while writing their creative stories. ($22.95 each, MAC/WIN CD-ROM).

Learning to Tell Time Series (IntelliTools): Here are two unique programs for students who need instruction and practice to understand the time of day and to tell time. Both are designed for easy IntelliKeys access and include uncluttered, easy-to-use color overlays. *Learning to Read Clocks* teaches time telling by the hour and half-hour. *Learning About the Time of Day* explores time through daily events (e.g., "About what time do you eat breakfast?"). These two programs fill a real need in special education by focusing on functional time-telling skills ($49.95 each; requires Macintosh, IntelliKeys, and IntelliPics).

Other New Packages from IntelliTools: ***Holidays Coloring Book*** and ***Animals Coloring Book*** are two easy-to-use, accessible elecronic coloring books for the Macintosh. Simply touch the IntelliKeys overlay and the area selected is instantly filled with the color or your choice. Each program also works with a switch or a mouse. Each coloring book picture and overlay is uncomplicated, and adjustable features allow for the meeting of individual needs. ($49.95 each). ***Hands-on Concepts***™ is a comprehensive set of readiness activities which was designed in Australia. Each of the six activities includes a color IntelliKeys overlay, recorded voices (with Australian accents!), and corresponding duplicating masters for off-computer activities. ($79.95 Mac version; requires IntelliKeys, IntelliTalk, and IntelliPics; DOS version also available).

Blocks in Motion (Don Johnston): This unique program was developed by a Swiss team of educators and engineers following Piaget's concepts of sensory-motor development. It takes the important early learning experiences which are based on the use of manipulatives and creates comparable activities on the computer screen, making them accessible to everyone. Children can "build" things, draw, paint, and animate their creations quickly and easily. In addition to being a terrific early childhood program, this is an excellent art program for students with physical disabilities ($79 MAC only; $24 - $49 each additional block kit).

Mr. Potato Head Saves Veggie Valley (Playskool): If you loved Mr. (or Mrs.) Potato Head as a child, you will get a big kick out of this nutty program (while your young child will learn problem-solving and early math skills). There's a drought in Veggie Valley, and it is up to YOU to help Mr. Potato Head and his daughter, Sweet Potato, bring rain to the valley. At any point in the Adventure Game, you can click on the "Change My Face" icon and dress up Mr. Potato Head in more ways than you ever imagined. ($44.95, MAC/WIN CD-ROM).



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SOFTWARE REVIEWS

STRATEGY GAMES OF THE WORLD

by Kathy Foster

SUBJECT AREA: Thinking/Reasoning Skills

FORMAT: Educational Game

PUBLISHER: Edmark
(800)362-2890

COST: $69.95
(School Edition)

GRADE LEVEL:
Grades 3 - 8

HARDWARE:
Macintosh: 256 colors required, 8 MB RAM, CD-ROM drive (double-speed highly recommended), System 7.0.1 or higher, 13" or larger monitor.

IBM compatible: Windows, Windows 3.1, Windows 95 or later, 8 MB RAM, CD-ROM drive (double-speed highly recommended), 486/33 MHz or better, Super VGA, 640x480 (256 colors), Hard disk with 2 MB free, Mouse, Windows-compatible sound-output device.

EDUCATIONAL GOALS: This program is designed to help 3rd to 8th grade students develop a variety of problem-solving strategies they can use everyday. The games help students learn to identify and analyze problems, look for patterns and sequences, plan ahead, predict outcomes, eliminate options known to be incorrect, test hypotheses and break problems into smaller parts that can be solved individually.

DESCRIPTION: The program contains computerized versions of three popular games from around the world. The first, **Go-Moku** is a variation of Go, a popular Japanese game. In **Go-Moku**, players quickly scan the board and find ways to place five pieces in a row before the opposition. The first player to get five stones in a row - horizontally, vertically or diagonally - wins the game.

The second game is **Nine Men's Morris** which originated in Egypt but has also been found in the ruins of Troy, Sri Lanka, Stone-Age Ireland and in England, carved into cathedral pews. The game can be won in two ways: by capturing all but two of the opponent's pieces or by blocking the opponent from being able to move.

The last game, **Mancala**, is played throughout Africa, the Middle East and the South Pacific. In Africa, **Mancala** boards often reflect the handiwork of the tribal culture, and some are revered as religious artifacts. In this game, players own positions instead of pieces. Students use a range of strategies to put stones in the positions around the board. The game is over when all the stones are gone from one player's side of the board. Whoever has the most stones wins.

At the beginning level for Mancala, players can click on the hyena for game strategy hints.

STRENGTHS:
The program provides "strategy coaches" which players can click on for tips and alternative strategies. When the hyena in **Mancala**, for example, looks excited, he has a strategy hint to share. The program contains challenge levels which automatically advance as students win games. As they advance several levels, the screen changes to a new screen and a new opponent. Players can also choose their level of difficulty. One of the best features is the real-world videos. The program includes more than 80 video examples of how people from all walks of life use strategies to solve problems in their daily lives.

SUMMARY: This program is creative, fun, and best of all challenges the user to develop a set of strategies. Each game provides a variety of amazing graphics as well as audio feedback. The use of real life strategy segments works to emphasize the importance of strategies in everyday life, not just to win a game.

Kathleen Foster is a graduate student in the Department of Special Education at Trenton State College.

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OPENING NIGHT

by JoAnn Giannobile

SUBJECT AREA: Creative Arts/Language Arts

PUBLISHER: MECC
(800)685-6322

COST: $79 retail

INTENDED AUDIENCE: Ages 8 to Adult

REQUIRED HARDWARE: Macintosh: LC III or greater (Power Macintosh recommend), System 7.1 or higher, 8MB RAM, 13" or larger color display, 5 MB Hard disk space, Double-speed CD-ROM, optional printer. A Windows version for 486 or higher computers is available.

EDUCATIONAL GOALS: To enrich the writing process while inspiring students to explore elements of character, plot, conflict, setting, dialog and conclusion; to help students understand, experience and explore the theater by working with actors, props, sets, lights, sound effects and music; and to provide opportunities for students to exercise higher-level thinking skills during the creative process.

DESCRIPTION: Developed in collaboration with the Children's Theater Company of Minneapolis, *Opening Night* is an interesting variation on popular story-writing programs. Students can create, direct and perform their own Victorian-era plays in a multimedia on-screen theater. The introduction presents examples of everything students can do with the program - the music plays, the "audience" hears dramatic sound effects, lighting evoke various moods, actors in costume move around the stage, and the scenery changes. Then, the lights dim, the curtain rises on Act One, Scene One, and the creative process begins.

A scene created by placing royalty in one of the ballrooms.

STRENGTHS: Numerous choices which are available at the click of a mouse can spark students' imaginations. Scenes can be created from more than 110 sets, 300 props, and a cast of 40 Victorian-era characters. The actors are video clips of real people in costume (and animals and birds, too), and students can direct their movements and emotions. The sound effects and musical clips are of high quality and offer a myriad of options.

Pull-down menus are easy to use, and questions about using the program's special features can be answered using the on-screen help file.

A "Behind the Scenes" CD-ROM that accompanies the program gives students a backstage tour of the stage and the scene, prop, and costume shops of The Children's Theatre Company of Minneapolis. It also contains a Theater Glossary of 120 theater-related terms, with color photos. The School Version's manual includes helpful suggestions for related activities.

WEAKNESSES: The consumer version does not come with a manual. Although on-screen help and tutorials are available, it takes a great deal of time to scan through all the icons and all the sub-menus to see the variety of selections available. This problem is rectified in the School Version which comes with an extensive manual which includes a complete picture library of choices.

SUMMARY: This program provides a unique interactive experience in creating and directing a play. It brings the concept of theater to life and provides a valuable alternative for motivating children to write.

JoAnn Giannobile is a graduate student in the Special Education Department at Trenton State College.

2 SINGLE SWITCH PROGRAMS

TURTLE TEASERS

by JoAnn Giannobile

SUBJECT AREA: Scanning/Switch Training

PUBLISHER: Soft Touch/KidTECH
(805) 396-8676

COST: $75

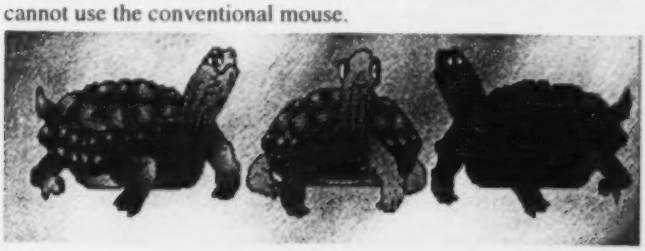
INTENDED AUDIENCE: Lower functioning students, students with multiple disabilities and their friends.

REQUIRED HARDWARE: Macintosh LCIII or faster, 8 MB of RAM, 13" color monitor, and 14 MB of hard drive space. External speakers are recommended. A Windows version is available.

ACCESS OPTIONS: Single switch, *TouchWindow*, *Intellikeys*, *Key Largo* (with *Ke:nx*), mouse or mouse emulation device.

EDUCATIONAL GOALS: To teach cause and effect, scanning, and color recognition, and to increase visual and auditory memory.

DESCRIPTION: Three games with three levels of difficulty provide entertainment and learning experiences for young children of all ability levels. Built-in, adjustable scanning capabilities provide training, as well as access, for children who cannot use the conventional mouse.



Easy Level: In "The Shell Game," one of three turtles steals a tomato or cucumber. The turtles shift positions and snap their shells closed. Visual and auditory cues can be used to help students remember which turtle has the veggie. The responses are untimed and there is instant feedback whether the selection made was correct or incorrect. If a wrong answer is selected a turtle responds, "Uh-uh-uh, not me!" and then disappears, leaving only two more choices. There is always an opportunity for success. If only one shell remains, when the child selects it, the turtle admits to having the veggie and quickly eats it. Scoring is based on completed games, not on the number of correct responses.

(continued on page 21)

RAD SOUNDS

by Deborah Newton

SUBJECT AREA: Switch use, Cause and effect

PUBLISHER: RJ Cooper
(800)RJCooper

COST: $89.00

INTENDED AUDIENCE: Teenagers with disabilities

REQUIRED HARDWARE: Macintosh with system 6.0 or higher, IBM/compatible with Windows, Apple IIgs

EDUCATIONAL GOALS: To develop the concept of cause and effect.

DESCRIPTION: This musical cause and effect program provides a selection of songs that can be heard by pressing a single switch or the button on the mouse. While the music plays, animated characters appear on the screen and break dance . Three different modes of operation are available. In the "Switch-user chooses songs" mode the music plays continually and each switch press causes the song to change. In the "Momentary switch play" mode the music plays only while the switch is activated; soon after the switch is released the music will stop. The third mode, "Timed switch play," permits the music to play for a certain length of time after the switch -user releases the switch. The timed interval can be adjusted from as little as 3 seconds to as long as several minutes.

STRENGTHS: Three distinct modes allow this program to be tailored to the needs of the individual user. The ability to control the intensity of the sound enhances this flexibility. These modes, especially "Momentary switch play," very effectively accomplish their goal of establishing and understanding of cause and effect. Quality sound makes this program very appealing.

WEAKNESSES: While generally a strong program, it is a bit tedious to increase or decrease the amount of time the music will play in "Timed switch play" mode; each mouse click advances the timer by just one second. Also, in this mode the timer can be set for lengthy intervals and although the dancers will continue to dance, the music stops after about 2 minutes.

SUMMARY: *RadSounds*, a cause and effect music program, provides strong auditory feedback, accompanied by amusing animations. It can be activated by a single switch or mouse click. Three modes of play give it the flexibility to meet individual needs. Although targeted at teenagers, *RadSounds* would be appropriate for individuals in any age group who require strong auditory feedback.

Deborah Newton is a graduate student in the Department of Special Education at Trenton State College.

PIP & ZENA'S SCIENCE VOYAGE

by Deborah Newton

SUBJECT AREA: Earth Science

FORMAT: Videodisc

PUBLISHER: Tom Snyder Productions®
(800)342-0236

COST: $249.95

GRADE LEVEL: K-3

HARDWARE: Videodisc player, large monitor, and remote control or barcode reader.

EDUCATIONAL GOAL: To explore basic science concepts while providing an opportunity to discover that science is real, meaningful, and part of everyday life, not just confined to laboratories and test tubes.

DESCRIPTION: *Pip & Zena's Science Voyage*, designed to be used for whole group instruction, tells the story of a young girl, Pip, and her adventures with her Grandpa and his boat, Zena. From the very beginning this tale engages students in the dynamics of their relationship while introducing a variety of science concepts. Offshoots, incorporating diagrams, maps, and video presentations, are provided to explain these concepts. As new science concepts present themselves in the story viewers are given the chance to view the offshoot at that time or to continue the story.

As captain of Zena, Pip's grandfather maintains a Captain's Log and presents Zena with one of her own at the end of the story. The videodisc kit, available in both English or Spanish versions, includes 30 Captain's Logs for the teacher to give to the students. Captain's Logs contain creative activities that correspond to the twelve offshoot lessons.

STRENGTHS: This delightful story is well suited for the targeted grade levels. The offshoots effectively present an array of scientific concepts, and playing and replaying the desired offchutes is effortless using the barcodes provided. Learning is supported by the activities in the Captain's Logs and the additional activities suggested in the Teacher's Guide. Especially noteworthy is the inclusion of World Wide Web (WWW) sites which can be explored to support and/or extend each of the lessons.

WEAKNESSES: No weaknesses are noted about this videodisc kit. It is unfortunate that it is only available to those with access to a videodisc player.

SUMMARY: *Pip & Zena's Science Voyage* is an excellent tool to introduce students to such concepts as day and night, seasons, weather, and the sun and stars. The videodisc explains the science students see in their everyday life. Lessons which incorporate the supporting materials provided reinforce learning while providing opportunities for creative expression.

TURTLE TEASERS

(continued from page 20)

Medium Level: At "The Pond" there are six turtles and a number of other creatures in a pond scene. A tomato bounces around the screen and eventually disappears into a hole or the pond or behind a bush. The child has to remember where it went. Clues are optional. If the child chooses incorrectly and picks the wrong spot, one of the characters on screen will perform an animated routine but show that they do not have the tomato. (My favorite is the happy little fish who leaps and dances to classical music.) When the correct choice is made, a turtle will emerge from the spot and gulp down the tomato. Points at this level are also based on completed games.

Hard Level: The "Tomato Dump" has two games. The first game involves 24 turtles colored red, yellow, blue, orange, green, and purple. At the easiest of three levels, the child is asked to pick the correct turtle while being shown three clues, a picture of the colored turtle, the word for the color, and an appropriately colored oval surrounding the clues. The next two levels eliminate the color clues leaving only the word as a clue.

The second game in this level is called "Find My Song." The six colored turtles each have a tune. The student must match the tune to the turtle. As incorrect selections are made, the turtle disappears so eventually only one turtle remains. This way, even a beginner can enjoy success.

Scoring at the hard level is more competetive. It is based on correct responses.

STRENGTHS: Untimed responses, instant feedback, large and clear graphics, cute voices, sound effects and entertaining music are all notable strengths. I love the "*splats*" and "*klunks*," the sound of the crickets at the pond and the turtle who has the tomato saying, "*A-yup*, I have the tomato" and then noisily gulping it down. Scanning speeds can be adjusted for all levels.

WEAKNESSES: In "The Pond" incorrect responses result in cute characters performing entertaining animations. This may be rewarding in itself and distract the child from trying to get the correct answer.

SUMMARY: This simple program effectively teaches switch use and early scanning. Three levels of difficulty act as an equalizer to insure that children with multiple disabilities can interact successfully with their non-disabled peers.

JoAnn Giannobile is a graduate student in the Special Education Department at Trenton State College.

STORYBOOK WEAVER DELUXE

by Danielle Niemann

SUBJECT AREA: Language Arts/ Creative Writing

PUBLISHER: MECC
(800)685-6322

TROUBLESHOOTING: MECCTECH Line (Automated Support System) 1-612-569-1678 available 24 hours a day or call the same number from 8AM-5:30PM Central Time to speak with a Technical Support Representative.

COST: $62.95 School Edition

AGE LEVEL: Ages 6-12

REQUIRED HARDWARE: Macintosh computer: 13" or larger monitor (640X480, 256 colors), 4MB RAM, System 7.0 or later, a CD-ROM drive and a printer.

IBM-compatible: 25 MHz 386 CPU or higher running Microsoft Windows version 3.1 enhanced mode or higher, 4MB RAM, 256 color display, a mouse, a CD-ROM drive, a Windows-compatible sound card and a printer. A 486 CPU or higher is recommended.

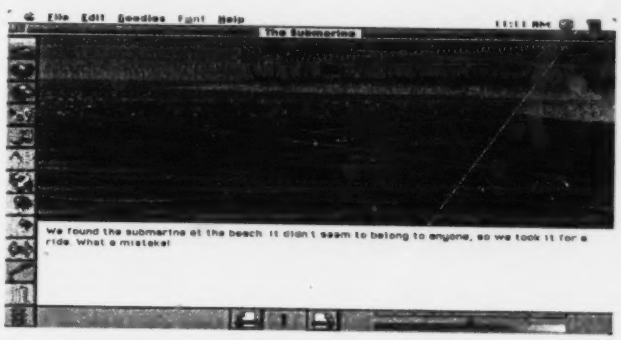
EDUCATIONAL GOALS: To challenge children to use their creativity to write and illustrate stories; to enhance vocabulary by associating words with their pictures; and to teach skills in story-sequencing. Most importantly, *Storybook Weaver Deluxe* allows children to create stories of which they can be very proud and can share with an audience.

DESCRIPTION: *Storybook Weaver Deluxe* is designed to make writing about anything easy and fun. Children have the opportunity to choose from a wide variety of images to create the background scenery and objects in the scenery for their stories. There are more than 140 scenery combinations ranging from ski mountains to under the ocean scenes. After choosing the scenery with a simple mouse click, children can select objects to go along with the scenery. There are more than 1550 images from which to choose, which are organized by categories such as real or make-believe people, real or make-believe animals, decor, kids, nature, shelters, things and vehicles. The people choices include astronauts, weight lifters, Arabian princes, arctic explorers, hobbits and wizards. Under the "other object" categories are teddy bears, wheelchairs, hot dog stands, adobes, elevators and poinsettias, to name just a few. Colors and page borders can also be manipulated. The sound effects button can be used to assign over 95 sound effects to any objects If a child wants to hear drum rolls, babies crying or people laughing, it is all there.

Another bonus of the software is the music button. With this a child can assign one of 55 songs to each page of their story. The user will then hear that particular song every time they are on that page of the story.

STRENGTHS: *Storybook Weaver Deluxe* encourages children to use their imaginations. They can choose to write stories of folklore or fantasy or they may decide to write about modern life and ideas that are well known to them. So many times, children see writing as a chore or an assignment. It is a pleasure to see software that takes away that negative image. They can just sit down, relax and write a story to their own liking. At the same time, they are improving their writing skills and learning to be creative. For a child who is apprehensive in fromt of a blank screen, there are several "story starters" which have preselected backgrounds for the first page of the story with a short phrase in the text section to get the child started.

The software is very user friendly. The tool palette is easy to use, the choices are easily identified, and little reading is required. For a child who has problems with spelling, the program features a spell button. The child can simply click on an object on the screen, then click on the spell button, and the word is automatically added to the text. There are also options for a spell check and thesaurus.


File Edit Goodies Font Help
The Submarine
We found the submarine at the beach. It didn't seem to belong to anyone, so we took it for a ride. What a mistake!

A sample screen from the "story starters" option.

WEAKNESSES: The hardware requirements for the software to run efficiently and effectively are rather demanding and beyond the capability of many classrooms.

SUMMARY: With its thousands of graphics, sound effects, and music, *Storybook Weaver Deluxe* is a terrific upgrade to the orignal version. It gives children an opportunity to practice writing in a way that they will enjoy. It is well designed and easy to use. The software can be used by students with a variety of abilities and is particularly appropriate for reluctant writers. The most beneficial aspect of this program may be the final product. When a child is finished writing his/her story and printing it, s/he will have a sense of pride and accomplishment.

Danielle Niemann is a graduate student in the Department of Special Education at Trenton State College.

THIS IS AN EXEMPLARY PROGRAM FOR CONSIDERATION IN TECH-NJ: Please list below the appropriate information.

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DESCRIPTION OF TECHNOLOGY USE: _____

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Exemplary Practices in Educational or Assistive Technology

We are looking for classrooms, programs, agencies, and individual computer-users to profile in upcoming issues of **TECH-NJ**. If you are using technology in ways that are making a difference for your students or clients, let us know. Send us an e-mail at technj@trenton.edu or return the Readers' Response Form via snail mail. Be sure to include your name and a phone number where you can be reached. We will make arrangements to send a Trenton State College student to observe your exemplary practice and interview you.

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TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

The College of New Jersey School of Education
Department of Special Education

Fall 1996, Vol. 8. No. 1

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LIVING A FULL LIFE WITH THE AID OF MINSPEAK™

by Anthony Robert Arnold

Editor's Note: This cover story holds special significance for me. It is written by a young man from North Dakota whom I had known 15 years ago when he was a preschooler in a program I directed at the University of North Dakota. I had the pleasure of seeing him again at the 1996 Closing The Gap conference. Not having seen him since his preschool days, I had still pictured him as the blond, blue-eyed toddler in the photograph that hangs in my office at The College of New Jersey. To my delight, he had grown into a poised, articulate high school graduate who is an outspoken advocate for augmentative communication and technology. To meet Anthony after all these years and to see all that he has accomplished was a teacher's dream come true. - Amy G. Dell

Anthony Arnold working at the Prentke-Romich booth at the Closing The Gap conference.

I am Anthony Arnold from Grand Forks, North Dakota. I was born with cerebral palsy, the result of my umbilical cord being wrapped around my chest, neck and head, causing a lack of oxygen to my brain. For those of you who are unfamiliar with the effects of cerebral palsy, I will try to explain a little about it. It affects a person's whole physical body, especially motor skills and speech processes. I personally have been affected in both of these areas. I use a motorized scooter for mobility and an augmentative communication device since my speech is unintelligible to most people.

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THE COLLEGE OF NEW JERSEY

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Correction: The phone number for ProMedia was printed incorrectly in the last issue of **TECH-NJ**. ProMedia, a supplier of assistive technology products located in New Jersey, can be reached at (800)462-0930 or (201)779-2600.

TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

Volume 8, Number 1

EDITORIAL

Congratulations!

New Jersey Teacher Madge Bradley 2nd Place Winner of Edmark's 1996 Special Educator of the Year Contest

We were thrilled to see the work of Madge Bradley recognized by the Edmark Corporation's Special Educator of the Year Contest. Madge, an Early Childhood/ Special Educator at the Kingsway Learning Center in Haddonfield, New Jersey, has long been an advocate of the use of technology with young children, and her program was profiled in an early issue of **TECH-NJ** (Fall 1990).

Using a variety of Edmark products, Madge enhances the learning process in her early intervention classroom. She substitutes the computer as a method of play for children who are unable to participate in conventional play activities. Children who lack the motor skills to manipulate blocks can, for example, build using *Sammy's Science House* or create with shapes using *Millie's Math House*. Those who cannot hold musical instruments can make music with Oranga Banga in *Thinkin' Things Collection 1*. She uses the Early Concepts Skill Builder Series to encourage imitation, communication and shared attention.

Madge has used the *TouchWindow* to allow students to practice balance and motor skills. Her students are placed on a small vestibular board or bolster on the floor in front of the computer, and they must steady themselves and then reach out to activate the *TouchWindow*. For those students who can sit, she even uses it to help them practice getting in and out of their seats by moving the computer farther away.

We congratulate Madge on this much deserved award from Edmark!

TECH-NJ is in Cyberspace!

In an effort to reach more people and spread the word about the benefits of educational and assistive technology, **TECH-NJ** now has a site on the World Wide Web. The site is still under construction, but eventually we will be posting the entire contents of our hard copy issues on the site. This should make the information in **TECH-NJ** accessible to readers who are blind, as well as serve as an outreach mechanism to technology-enthusiasts. Hopefully, a presence on the Internet will also increase communication with our readers. Check us out at **http://www.tcnj.edu/~technj**.

A. G. D.

PROGRAM PROFILE

TECK TREK: A JOURNEY INTO THE WORLD OF MULTIMEDIA

by Kathleen Foster

Writing research reports in school is not what it used to be. Remember the days of organizing hundreds of index cards into coherent paragraphs only to discover you were two pages short of your 10 page requirement? For the students of the West Windsor-Plainsboro Upper Elementary School, those kinds of research reports are a thing of the past. The students have embarked on a journey through the ever-expanding world of multimedia and in doing so are creating research projects for the 21st century.

The journey, known as Teck Trek, was created by Mike Courtney, the Media Specialist at the West Windsor-Plainsboro Upper Elementary School. The idea was first sparked over five years ago when he was approached by a sixth grade teacher about helping his students use resources in the library to put together a news show. The project was such a success that Mr. Courtney wanted to make the same type of information and training available to all the students. The program in place today is organized into three levels with each level building on the knowledge gained from the previous level. The three grades at the Upper Elementary School, 4th, 5th and 6th, have unique programs geared toward their academic abilities and educational needs.

Introduction to Resources and Research Materials

Teck Trek I - The Adventure Begins - is designed to familiarize the incoming 4th grade students with the resources available at the Upper Elementary School. For most of the students, the size of their new school can be overwhelming. This program is one way the students are welcomed into their new environment. Level I is geared toward orienting the students to materials they need to use in order to do effective research in the library.

The course is broken down into four stations with the students spending approximately 20 minutes at each station. The students learn how to locate a book using the On-Line Electronic Card Catalog. They are required to determine the location of the book in the library using either the author, subject or title of the book. They utilize various on-line research resources, including three different electronic encyclopedias maintained by the library and the *SIRS Discover* CD-ROM (SIRS, Inc.). Finally, the students practice reading comprehension skills by using the *Accelerated Reader Computerized Reading Management Program* (Advantage Learning Systems, Inc.) to be tested on books they have read as part of the Teck Trek course.

Mastering Video

Level II of the Teck Trek program - The Adventure Continues - is designed for the 5th graders at the Upper Elementary School. Over four class periods, the students spend approximately 20 minutes at eight stations. They learn the proper connection wiring of a TV and VCR, as well as how to correctly tune, rewind and fast forward. They learn to properly utilize the counter on a VCR to find specific information. Students demonstrate their knowledge by independently wiring a TV/VCR and locating a previously assigned scene.

Each student completes a 30 second videotape demonstrating their knowledge of various control buttons including record/pause, fade, and wide angle/zoom. The students are responsible for demonstrating proper handling techniques and recognizing the direction of the light source when completing their videotapes.

Another station in the Level II program involves using a laser disc to cue up three individual frames on an assigned subject. Students must first properly connect the laser disc machine to a TV and load the needed disc. At another station, students work with overhead projectors and transparencies. They learn to create and edit overhead transparencies, as well as how to operate the machine, focus, align and load the transparencies.

Conducting Electronic Searches

Students also spend time using electronic media for searches. They use a variety of electronic tools to locate information on previously assigned subjects. An example of an electronic tool is the CD-ROM, *Middle Search* (EBSCO Publishing), which is a magazine index of over 100 magazines to locate text articles; they connect to the World Wide Web through *Netscape* and locate articles on assigned authors; they use the *Columbia Granger's World of Poetry Index* (Columbia University Press) to locate a poem by author, subject and title, and they learn to navigate through the many search methods of *Compton's Interactive Encyclopedia* (Compton's) to find the answer to an assigned question.

Producing Multimedia Products

Level III of the Teck Trek course - The Final Frontier - continues to challenge the creativity of the students. "In sixth grade we try to go one step further. Now that students have had some experience with the equipment, we ask them to produce a multimedia product." Sixth graders spend five periods in the library working through four different stations.

The first station, Laser Disc Presentation, allows students to further expand their knowledge of working with laser discs and create an oral and visual presentation. They use the CD-ROM, *Encyclopedia of Animals* (Laserdisc Corporation of America) to choose an animal and find five specific pictures of their chosen animal. They then use information sheets from the CD-ROM, *Middle Search*, to write a two paragraph essay on their animal. Finally, they use a computer program called *MediaMAX* (Videodiscovery, Inc.), which allows them to type in the frame numbers for the five pictures they located on the laser disc. The final presentation is a combination of the essay and the corresponding pictures from the laser disc.

At the second station students work

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USER PROFILE

WORD PREDICTION MAKES THE DIFFERENCE: LEARNING DISABILITIES IN MIDDLE SCHOOL

by Danielle Niemann

I was recently given yet another lesson on how important technology can be in the lives of students with disabilities. This lesson was different, though. I did not learn from my textbooks; I did not learn from my professors. I learned from a 14-year-old named Josh and his parents. Josh is an eighth grade student in a southern New Jersey school district. He enjoys many of the pastimes that other 14-year-olds do. He listens to music and talks to girls on the phone. He likes to play baseball, soccer, and roller hockey and attends sleep-away camp in the summer.

Deficits in Written Language

At a young age, Josh was found to have severe learning disabilities which have resulted in significant academic deficits, specifically in written language. When people think of learning disabilities, they often think that a person has problems in only one area of development. Unfortunately, this is not the case with Josh. Josh's learning disabilities are evident in any subject that requires organization, handwriting, spelling, or composition. In the short amount of time that I spent with Josh and his parents, I was able to catch a glimpse of the intense frustrations that they have all experienced due to these deficits.

Josh's parents handed me a stack of letters that Josh had written the previous summer from sleep-away camp. I glanced through the crumpled pages trying to make out a word here or there. In most of the letters, I was only able to decipher the date, the greeting "Mom & Dad," and the salutation "Love, Josh." The illegible words were not even written on any lines. They zigzagged up and down the page. They looked as if they were not organized in any logical fashion whatsoever. His parents described to me how they would sit together and try to read the letters. Usually, they could not decipher more than a sentence or two, if that. They explained the frustration of not knowing what their son was trying to tell them.

Spelling: A Major Obstacle

Josh's parents pointed out that even if you can get used to his handwriting, the next obstacles are spelling and composition. Josh has difficulty understanding the connection between sounds and letters. This, in turn, creates big problems with spelling. His phonemic unawareness was evident as I tried to read through the camp letters. His parents explained to me that Josh has less difficulty with oral expressive language. Since his expressive language is at a much higher level than his written language, he finds it frustrating to complete writing assignments. Imagine basically knowing what you want to say, but not being able to get it down on paper. This is something that Josh experiences every day.

After trying *WriteAway*, Josh wrote a sentence and asked, "Can I write some more?" This was the first time he had shown any competence or interest in writing.

When Josh was in the seventh grade, his parents were referred to the Center for Enabling Technology, a non-profit computer resource center in northern New Jersey which is part of the national Alliance for Technology Access (ATA). I spoke with Debbie Newton, the assistive technology specialist at the center, who conducted a computer evaluation on Josh. While at the center, Josh had the opportunity to try different software programs which might help him with his writing, such as *Storybook Weaver Deluxe* (MECC) and *Spell it 3* (Davidson).

WriteAway: A Solution

After analyzing Josh's interests, learning deficits, and academic needs, Debbie thought that Josh might benefit the most from word prediction software and decided to try *WriteAway* (Assistive Technology, Inc.). Josh wrote a sentence, then turned to his mother and asked, "Can I write some more?" Josh's mother was overcome with emotion. This was the first time she had ever seen her son show any competence or interest in writing.

WriteAway was the word prediction program chosen because it was compatible with Josh's home and school computers (IBM). The way that the program works is that as Josh begins typing the first few letters of a word, a numbered list of possible words beginning with those letters appears at the bottom of the screen. Josh then chooses the word he wants by typing in the number. This way, Josh does not have to type the entire word and struggle with the spelling of the word. This allows him to be free to focus on the content of what he is writing. Word prediction is very beneficial to a student like Josh because it 1) enables him to avoid spelling mistakes, 2) reinforces the correct spelling of words, and 3) develops his writing skills.

Completing Schoolwork Independently

Josh uses the program to complete his writing assignments in school and homework assignments at home. Josh's parents are very pleased with the way his writing has progressed. After he began working with *WriteAway*, he was able to complete quality homework assignments. He now does his weekly vocabulary assignments on the computer. For the assignments, he has to write original sentences using his vocabulary words. In the past, Josh would either write the sentences out, which usually meant that they were illegible, or he would dictate the sentences to his mother and she would type them on a word processor. Now, Josh is able to do these types of assignments on his own. This is important progress for an adolescent in middle school.

WriteAway also has an auditory component which Josh has not yet been able to use. A sound card enables the program to provide voice output word-by-word or sentence-by-sentence. His parents feel that this would be a beneficial

(continued on page 8)

ONLINE EXPLORATIONS

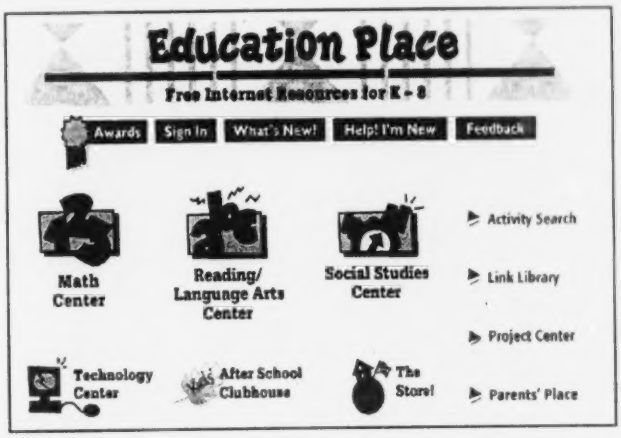
ONLINE TREASURES TO ENERGIZE LESSON PLANNING

by Regina Quinn

Houghton Mifflin's Education Place

http://www.eduplace.com

Are you always looking for fresh ideas to enhance your lessons? Do you find yourself searching through book after book for activities to supplement your curriculum? Now with just a click of the mouse you can find more ideas and materials than you ever imagined. Houghton Mifflin's Education Place on the World Wide Web is designed to support and supplement their reading and language arts program called Invitations to Literacy. Their site provides numerous helpful resources for teachers and parents, and plenty of creative learning activities for children.



Benefits for Elementary Classes

The teachers and students at New Hope-Solebury Elementary School in Bucks County, Pennsylvania are finding this site to be indispensable. Sue Zerby, a third grade teacher at the school, likes to use the site to find creative activities that she incorporates into her lessons. She has been able to find cross-curricular activities for both current and future themes.

The Education Place home page offers many options. There are branches to specific subjects such as math, reading/ language arts, social studies, and technology. The technology section, for example, includes reviews of popular educational software programs so teachers can read reviews of software before spending money on titles for their classroom. Or a teacher can click on the menu item called the Project Center which leads to suggestions for imaginative classroom projects which use the vast resources of the Internet. A click on Activity Search provides a lengthy list of non-electronic classroom activities that relate to desired subjects and grade levels. The Link Library provides direct links to other sites on the Internet which provide information and resources for each subject and theme. From the Link Library classses can go on virtual field trips to places like the White House, the Grand Canyon or Williamsburg, VA.

Motivating Learning Activities

Houghton Mifflin's Education Place is not just for teachers. Children will love to play some of the learning games which are included under each subject. For example, Sue Zerby's third grade class loved playing the reading/language arts game called Wacky Web Tales which is an electronic version of the old paper and pencil Mad Libs. When they finish a tale, they can post their creation on the site for students around the world to read. They also enjoy Fake Out!, a game of definitions. When they go to the Math Center they work on solving challenging brain teasers. On some days they take online field trips. One of their favorite activities was visiting the White House for Kids page, which they accessed directly from the Houghton Mifflin site, and writing a letter to Sox, the First Cat (they are eagerly awaiting a reply).

The Kids' After School Clubhouse provides a place for children to locate a list of books on their reading level, read "kid reviews" of the books, and have an opportunity to send in a book review of their own.

The Parent Connection

Houghton Mifflin did not forget the important role parents play in the education of their children. There is a special Parents' Place that provides information on topics such as Understanding Beginning Writing and Guiding Your child's TV Viewing. Resources for further information are provided. Parents can also search through the Activity Center to find ideas for home activities which relate to the theme of the stories their children are reading in school.

As you can see, there is so much to choose from, you may be at the computer all night! But, with practical sites like the Education Place, you will never be at a loss for ideas or a place to find new ones.

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Regina Quinn is a graduate student in the Department of Special Education at The College of New Jersey.

Macmillan/McGraw-Hill's Resource Village

Resource Village: A Place for Teachers (Macmillan/McGraw-Hill's School Division) located at **www.mmhschool.com**, is another place where teachers of kindergarten through eighth grade students can obtain a wealth of resources and appropriate web-related activites for curriculum enhancement in reading/language arts, math, social studies, and professional development.

The professional development area of Resource Village offers the latest information on using the Internet with students. Educators also have access to an online help service, Cyber Scout, that searches the Web for sites that match an educator's individual curriculum.

BEST COPY AVAILABLE

INCLUSION: RECOMMENDED SITES ON THE INTERNET

by Orah Raia

Including students who have disabilities in regular classrooms with their typical peers is a very promising practice. Although there are disagreements about inclusion, one research finding is indisputable - for inclusion to be successful, teachers and parents need to work together to plan carefully how the child will be actively included in classroom activities. In addition to being creative themselves, teachers and parents can turn to others who have found ways around the obstacles. For this kind of information and for directions to other helpful resources, the Internet is a bona fide treasure-house.

Below are sites on the World Wide Web which provide constructive information on inclusion. Many of these sites also provide links to additional sites and include illuminating articles which can be downloaded.

Axis Disability Rights Website
URL: http://www.almanac.bc.ca/~axis/

The Axis Disability Rights Website is operated by advocates Norman Kunc & Emma Van der Klift of Axis Consultation & Training Ltd. in British Columbia and is dedicated to the distribution of information concerning disability rights.

Sample Content:
•Inclusive Education
•Curriculum Adaptations
•Behavior Modification & Aversive Therapy
•Societal Values & Attitudes
•Professionalism
•Women with Disabilities
•Family Issues and Disabilities

Center on Human Policy /Syracuse University
URL: http://web.syr.edu/~thechp/

The Center on Human Policy is a policy, research, and advocacy organization involved in the national movement to insure the rights of people with disabilities. Since its founding, the Center has been involved in the study and promotion of inclusive community opportunities for people with disabilities.

Sample Content:
•National Search: The Center on Human Policy seeks nominations for organizations or coalitions promoting the full inclusion of people with developmental disabilities in the community.
•Position Statements
•National Resource Center on Community Integration
•Human Policy Press
•WHAT'S NEW - A resource for return visitors, listing the latest additions with fast and easy links to them.

Family Education Network
URL: http://www.familyeducation.com

The Family Education Network is a comprehensive resource designed to help families play a more active role in their children's learning. Its goals are to:
• Provide online and print tools to help parents and children succeed in an increasingly competitive world.
• Present ideas and proven practices that support the efforts of families and schools in the education of children.
• Highlight successful educational projects, programs, and initiatives that communities can emulate.
• Encourage individual and community involvement in the educational process.

In addition to providing helpful resources on specific disabilities and advocacy, the Network's **Special Needs Channel** features a monthly column on inclusion written by a parent and in the near future, by others with direct experience in inclusion, and an ongoing discussion board which regularly posts information on strategies and best practices in inclusion.

Family Village
URL: http://www.familyvillage.wisc.edu

This site provides information, resources, and communication opportunities for parents of children with cognitive and other disabilities. It includes a library about specific disabilities (arranged alphabetically), with supporting organizations, mailing lists, full text articles and bibliographies of web sites related to each disability. It also includes the Post Office and the Coffee Shop which provide contact information for families to reach out to other families in similar positions, and a Shopping Mall which lists businesses supplying specific items of interest to individuals with disabilities.

The Family Village Inclusion Resources
URL: http://www.familyvillage.wisc.edu/edu_incl.htm

Sample Content:
•Who to Contact
•Where to Go to Chat With Others
•Read More About It - On-Line Articles
•On-Line Newsletters
•Recommended Reading
•Books, Videos, Newsletters & Other Resources
•Conferences, Workshops, Institutes
•Research
•Web Sites

Inclusion Press/Best of Inclusion Press
URL: http://www.inclusion.com/bestof.html
This site contains links to numerous articles by Jack Pearpoint, Marsha Forest, Judith Snow, and other international leaders in inclusion.

National Parent Information Network
URL: http://ericps.ed.uiuc.edu/npin/npinhome.html

The purpose of the National Parent Information Network (NPIN) is to provide information to parents and those who work with parents, and to foster the exchange of parenting materials. Articles presented in full text on NPIN have been screened for reliability and usefulness. Publications, brochures, and other materials that are merely listed on NPIN may not have been reviewed and are included for informational purposes only.

NPIN is a project sponsored by two ERIC clearinghouses: the ERIC Clearing-

house on Urban Education at Teachers College, Columbia University; and the ERIC Clearinghouse on Elementary and Early Childhood Education at the University of Illinois at Urbana-Champaign; all other ERIC system components are also contributors and participants.

Special Education Resources on the Internet
URL: http://www.hood.edu/seri/serihome.htm

The Special Education Resources on the Internet (SERI) project is a collection of Internet accessible information resources which may be of interest to those involved in the fields related to Special Education. This collection exists in order to make online Special Education resources more easily and readily available in one location. The table of contents listed below is a general listing; under each category is a multitude of listings and links to additional sites.

Sample Content:
•General Disabilities Information
•Disability Products and Commercial Sites
•National Organizations
•Legal & Law Resources
•Parents' & Educators' Resources
•Mental Retardation
•Hearing Impairment
•Special Education Discussion Groups
•Physical and Health Disorders
•Behavior Disorders
•Learning Disabilities
•Vision Impairment
•Attention Deficit Disorder
•Autism

Students with Intellectual Disabilities: A Resource Guide for Teachers
URL: http://www.est.gov.bc.ca/specialed/sid/content.html

This site, which is provided through the British Columbia Ministry of Education, offers many practical ideas which help teachers cope with typical classroom situations.

Sample Content:
•Preparing to Teach
•Transitions
•Tips for Teachers
•Fostering Inclusion
•Adapting Curriculum
•Deciding on Individual Goals
•Scheduling for Individualized Goals
•Reporting to Parents
•Explaining Different Expectations
•Balancing Teacher Time and Energy
•Working with a Teacher Assistant
•Promoting Friendships
•Dealing with Challenging Behavior
•Providing Community and Work Experience

Studies on Inclusion
URL: gopher://ericir.syr.edu:/70/00/Bibliographies/Extended/main_95

This site provides a summary of abstracts pertaining to studies on students with disabilities included in general education classrooms. Some studies included are: Teacher Perceptions: Impacts of Planning for Inclusion; Providing Peer Coaching in Inclusive Settings: A Tool for Consulting Teachers; The Effect of Inclusion Training on Teacher Attitude Toward Inclusion; Adaptive Inclusion with Special Needs Children: Inclusion That Can Work for Rural Schools. Information given includes the author, length of article, publication source and year.

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Orah Raia is a graduate student in the Department of Special Education at The College of New Jersey.

INTERNET SERVICE PROVIDERS

Not satisfied with your online service? Not sure what to do? You'll find that **http://www.thelist.com** is an invaluable site for locating Internet Service Providers (ISPs) in your geographic region. All ISPs are listed on this site, which can be searched by area code or geographic area.

To Our Female Readers:

New to the Internet? Anxious about logging on? Two newly published guides to cyberspace were written specifically to help women overcome their reluctance to use this exciting technology. *The Internet for Women* by Rye Senjen and Jane Guthrey (Spinifec Press; $16.95) is a straightforward informative guide to exploring cyberspace. *SurferGrrrls: Look, Ethel! An Internet Guide for Us!* by Laurel Gilbert and Srustal Kile (Seal Press; $15) is a little offbeat, as one might expect from the title, and includes a list of must-see feminist Web sites in addition to standard internet information.

UPCOMING EVENTS

March 18-22, 1997
Center on Disabilities at California State University, Northridge
12th Annual International Technology and Persons with Disabilities Conference
Los Angeles, CA
(818)677-2578
e-mail: ltm@csun.edu
http://www.csun.edu/cod/

June 30 - July 2, 1997
NECC '97
The 18th Annual National Educational Computing Conference
Seattle, WA
(360)650-7620
e-mail: necc97@wce.wwu.edu

July 8-12, 1997
ConnSENSE '97
14th Annual Conference of the Connecticut Special Education Network for Software Evaluation
Windsor Locks, CT
(860)455-0707
e-mail: Rucker@UConnvm.UConn.edu
http://www.ucc.uconn.edu/~wwwpcse/cs97.html

FOR DEAF STUDENTS

STORY-TELLING IN ASL AND WRITTEN ENGLISH

by Amily Beidelman

One of the most difficult skills for Deaf children to master is the transference of story-telling in American Sign Language (ASL) to the written English form. "Telling Tales in English and ASL," a videotape from the National Center to Improve Practice (NCIP), demonstrates several creative teaching strategies which address this problem.

The video focuses on a story-telling program used in the language lab at the Horace Mann School for the Deaf in Boston. The immediate goals of the program are to get students involved in using their imaginations, stretching their vocabularies, developing social skills in peer relationships, and fostering enthusiasm for reading in a risk-free environment. The ultimate goal is for students to develop proficiency in telling stories in ASL and to transfer this skill to standard written English.

The video follows a teacher and her class as they work in the language lab. First, the students watch a videotape of a story told in ASL. The teacher and students then discuss the story and related themes to ensure that the students have an accurate understanding of the story. After the discussion, the students participate in various activities to enhance their skills in ASL and written English.

To help a child see the relationship between a story he signs in ASL and printed English the teacher videotapes him as he retells the story. Based on what the student signs the teacher then writes a draft in standard English. The teacher and student work together to revise this draft to better reflect the student's intent.

Other students in the lab work with teacher aides or independently on related assignments. Some students make illustrations to help them when retelling their story. Others who are more adept at translating ASL into printed English use computers to write essays based on themes from the story.

The video is closed captioned and is available in open caption, as well as in described versions upon request.

At New Jersey's Katzenbach School

The Marie Katzenbach School for the Deaf (MKSD) in Trenton is also using video recording to enhance the literacy skills of Deaf children. Kim Arrigo, the Deaf Culture Specialist at the school, is currently videotaping herself as she signs popular children's stories. Using big books, the camera first focuses on the picture in the book, then on Kim signing the corresponding text in ASL. Kim' s signing throughout the video is both expressive and engaging. The stories are filmed in ASL only, and there are no subtitles or voice over. In addition to the actual story, Kim asks the viewer questions and comments on the story, as a teacher or parent would when reading a story to a child.

Currently MKSD has produced five different tapes, four with two stories each and one with only one story. A sampling of stories includes *Corduroy*, *If You Give a Mouse a Cookie*, and *The Very Hungry Caterpillar*. The videotapes are available for parents to borrow, along with a small copy of the corresponding book. Parents are asked to fill out an evaluation form of the videos and return it so that improvements can be made in future tapings.

These videotapes are especially helpful for hearing parents who feel their sign skills may not be adequate to relay the full intent of a story. The tapes thus serve two purposes: to engage children and parents in sharing books and to foster ASL story-telling skills.

The videotaped stories at Katzenbach are geared toward younger children, while the program in Boston is focused on older elementary-aged children. Both programs share the goal of helping Deaf children make the connection between ASL and printed English.

For more information about the tapes, contact MKSD at (609)530-3185.

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Amily Beidelman is a senior in the program for Education of the Deaf and Hard of Hearing at The College of New Jersey.

Word Prediction

(continued from page 4)

feature, but the computers at home and in school are not equipped with the needed sound cards. When available, the speech output feature will help to focus Josh's attention. It will provide a multisensory approach to writing in which he will be able to write, read, and hear his words.

Josh and his parents are very pleased with his accomplishments since he has been using the computer with *WriteAway* to complete his writing assignments. His parents made it clear that they would like to see other types of technology available to their son and other children with learning disabilities. They would like to investigate voice recognition software. With it, Josh would be able to speak into the computer and his speech would be converted into text. This would enable Josh to make use of his fine expressive language without always worrying about spelling and the available vocabulary.

Josh's mom summed up her feelings about Josh's progress with technology when she told me, "I think that technology is the key for these kids to unlock what it is they really know. You can't find out what they can do if you don't give them a way to do it."

Product Information:

Storybook Weaver Deluxe
MECC
(800)685-6322
$62.95 (School Edition)

Spell It 3
Davidson
(800)545-7677
$79.95 (School Edition)

WriteAway
Assistive Technology, Inc.
(800)793-9227
$199

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Danielle Niemann is a graduate student in the Department of Special Education at The College of New Jersey.

RESOURCES

ART FOR ME, TOO!

reviewed by Judith Hendricks

Imagine children with disabilities in speech, language, vision, cognition, and fine or gross motor skills being able to participate in the wonderfully motivating, hands-on, multi-sensory experience of creating arts and crafts. Pat Mervine, in collaboration with Michele Burton and Lynn Wood, bring this vision to life in their new book, **Art For Me, Too!** (Mayer-Johnson).

Art For Me, Too! is a comprehensive curriculum guide featuring 45 thematic units which can be integrated into a variety of classrooms. Each thematic unit can also be used in conjunction with the 45 cooking activities presented in Pat Mervine's previous cooking/communication book entitled, **I Can Cook, Too!** (see *TECH-NJ, Vol.7, No.1* for review).

The book is designed for children on a pre-reading and early reading level, and each unit contains both words and symbols. The curriculum encourages the development of literacy and functional communication and provides practice with visual and auditory attention, olfactory awareness, fine and gross motor skills, receptive and expressive language, cognitive development, choice-making, and social skills.

The uniqueness of the book is its focus on communication and adaptations. The suggested adaptations allow children with disabilities to explore their creativity by adapting each project to meet their individual needs and abilities. Adaptations include the use of switches, computer interfaces and alternate inputs, and a number of low-tech modifications used for painting, writing, stirring, and other motor skills. Communication boards for each activity are an invaluable feature of this book.

Art For Me, Too! is an indispensable resource which is a must for every teacher of young children with disabilities.

Judith Hendricks is a graduate student in the Department of Special Education at The College of New Jersey.

NJ TARP SPONSORS FREE TRAINING WORKSHOPS

TARP, in collaboration with The College of New Jersey and the Center for Enabling Technology (CET) in Whippany, NJ, is sponsoring the following workshops free of charge. For information or to register, call the Center for Enabling Technology at (201)428-1455.

Making It Happen: Assistive Technology for Occupational Therapists (AT for OT's)
This workshop will focus on integrating computers and assistive technology into OT and the IEP. Related WWW sites will be explored.

Mon., May 19, '97 7:00 - 9:00 p.m.	Center for Enabling Technology	Whippany, NJ

Making It Happen: Assistive Technology and Students with Disabilities
This presentation demonstrates the power of assistive technology to transform the school experience of students with disabilities. A variety of assistive technology hardware and software that make the computer accessible to individuals with disabilities will be demonstrated. Integrating assistive technology into the IEP and relevant legal mandates will be addressed.

Tues, Apr. 8, '97 10:00 -11:30	LRC Central	Old Bridge, NJ
Mon., Apr. 14, '97 10:00 - 11:30	LRC South	Sewell, NJ

This workshop is also being presented at several statewide conferences. Call CET for more information.

Using Ke:nx to Provide Access to the World for Children with Physical Disabilities (Hands-on)
Ke:nx allows the user to operate a Macintosh computer and run standard programs with alternate keyboards, switches, onscreen keyboards, and even Morse Code.

Thurs. Apr. 17, '97 10:00 - 12:00	Center for Enabling Technology	Whippany, NJ

Advanced Ke:nx - Creating Customized Set-ups with Ke:nx Create (Hands-on)
Participants will learn how to create custom scans and alternate keyboard layouts using *Ke:nx Create*.

Tues., Apr. 29, '97 10:00 - 12:00	Center for Enabling Technology	Whippany, NJ

Creating Customized Overlays for IntelliKeys to Meet Individual Needs (Hands-on)
Particpants will learn how to use *Overlay Maker* to create custom overlays for Intellikeys, an alternate keyboard.

Tues., May 6, '97 10:00 - 12:00	Center for Enabling Technology	Whippany, NJ

TECHNOLOGY AND THE ARTS

ADVENTURES IN ARTLAND: CD-ROM'S FOR THE TORTURED ARTIST IN EVERYONE

by Donna Williams

I recently had an opportunity to examine three unique software programs and try them out with my students at Emerson Elementary School in Plainfield, New Jersey. All three programs are designed to engage people in exploring and learning about the visual arts. They are available as CD-ROMs for both Windows and Macintosh platforms; all require 6-8 MB RAM and double-speed CD-ROM drives. My students and I loved the programs, and we highly recommend them to teachers, parents and kids of all ages.

look what i see!

Level: Ages 4-10

This program is designed to be an introduction to art for the non-reader. Based on a series of parent-child workshops conducted at the Metropolitan Museum of Art, it presents the concepts of color, shape, and mood, and basic painting techniques. The artwork selections are primarily paintings and photographs. Students can view narrated slide shows, select two images to compare with each other, watch QuickTime movies of children painting, and/or play various games. An image can be viewed with a magnifying glass, and more information about a work can be easily accessed with a click of a mouse.

look what i see!'s activities are grouped into a series of "rooms," each designated by a different child sitting at a desk. The activities encourage critical analysis of the paintings, and they vary according to the "room" you are visiting. For example, one game may ask students to click on three different shades of blue (color), locate all the triangles (shape), or pick an appropriate sound effect or piece of music for the scene (mood). In the "change the elements" activity, children can manipulate the colors, background and size of items in the artwork. In the "how to paint room," each icon takes you to a video demonstration of using brushes, color mixing, and other painting steps.

I had my greatest success using *look what i see!* on a large monitor, taking student suggestions and having individual students come up to select images, click on choices, etc. This way I was able to move through the program at the pace of the class. My only reservation is the speed of loading on a double-speed CD-ROM drive. I would recommend running the program on a faster drive.

In all, the younger students loved the ease of use, colorful images, and animation of *look what i see!* The information was relevant and was on par with the concepts presented in lower-elementary art classes. While I do not recommend the program for most older students, any student with limited reading or English proficiency will enjoy this simple introduction to art.

With Open Eyes: Images from the Art Institute of Chicago

Level: Grades 1-8, including early or poor readers

This was my second favorite program due to its thoroughness. Over 200 works of art in various media from around the world are viewed and discussed in detail. While informational text onscreen is provided, reading is not necessary to enjoy the program.

Icons take you to screens that provide information on each work. Clicking on a ruler takes you to a 10-foot room of an art gallery in which the piece of art is placed next to a person for scale. The clock takes you to a timeline, from which you can go to other works of art from the same period. A click on the globe gives you a world map on which the artwork's country of origin is marked by a flashing yellow pin; clicking on any pin on the map shows you all the works in the collection from that country and allows you to jump to any one.

Help is denoted by a life preserver, which allows you to turn audible help on. With the audible help on, a voice describes the function of each icon every time the mouse passes over one. The information provided by the "big red mouth" and the bronze "INFO" plate is the same, but the mouth reads it aloud while you view the work. "Hands" take you forward or backward in your journey, the "frog" allows you to "leap" randomly in the collection, and the "couch potato" gives you an automatic slide show. Favorite images can be stored in a scrapbook as your personal slide show for later viewing.

While the games are fun, they are limited to either answering a question, completing a puzzle or finding a detail. My students mainly used the program to explore the art collection, which includes a nice selection of both well-known and more obscure works. The large number of selections precludes a student running through the program in one setting, as with *look what i see!*. One of my second graders loves history, and he could not get enough of *With Open Eyes*. I found it interesting that he enjoyed the examples of armor, coins, and clothing just as much as the "regular" art. Also, because he picked up on the program so fast, I had him introduce it to small groups of his classmates while I went on with my regular lesson.

For the level of detail provided, this program is extremely easy to use. My students and I have only small complaints. S. wants me to tell you that if you click around too fast with the help on, the words "crash into each other," meaning that the tracks will run simultaneously. Since every icon has its own trademark sound and help description, this can be quite a cacophony. Once you understand the program, you can turn the help off until you need it; the "life preserver" is never more than one or two clicks away. I also think a "no exit" setting would be very helpful, because little fingers cannot seem to resist the big white "EXIT" sign.

ArtRageous! The Amazing World of Art

Level: Grades 1-4 with supervision, Grades 5-adult with common sense

I think this is my favorite program out of the three. It is one of the most graphically satisfying CD-ROMs I have used. The images are very up to date in design, the animations are wonderful, and the

colors are extremely vibrant (you really need a great color monitor to appreciate these colors).

Like *look what i see!*, this program is for exploration; however, it takes every concept from *look what i see!* and expands on it exponentially. Instead of rooms reached from a main menu, we have "worlds" collected in "neighborhoods" reached from a central "plaza." The "neighborhoods" are color, light, perspective, composition, and life of art. You navigate through the program by clicking around the sides of the plaza or neighborhood. The arrow changes shape to denote hotspots which allow you to enter a neighborhood or a world, or participate in an activity.

The program is loaded with music and narration. Each area has verbal instruction and descriptions of images, and the mood is irreverent. Throughout the program, you are guided by a QuickTime character named Tim, a gentleman with a British accent who wears a smoking jacket, a ponytail and spectacles. You can make the talking stop by clicking the mouse; my students quickly discovered they could make Tim shut up by clicking on his face! Be aware that the vocabulary is tough, but the built-in database defines most terms. It is a great way to have students hear art terminology used in a context other than art class. In addition, the timeline and help features provide a wealth of information. Just be aware that the reading level may frustrate younger students and poor readers. Many of my students seemed to just ignore the text in preference to the games.

Oh, yes, the games! A better word would be activities, because you do not so much play as participate. Some activities are easier than others, and some require endurance to complete. I never could complete the timed activities, even at the beginner level. The high level of visual discrimination required for some of the puzzles can be frustrating; however, I had second graders really take their time to accurately complete puzzles that I had assumed they would quit. Many students loved changing the direction of the light, intensity of color, or perspective in a room.

Everyone's favorite room by far was the "color neighborhood." Activities there include "playing" a painting by Kandinsky to explore his theory of color and music, creating a multi-level color wheel from scratch (I had a first-grader call out "secondary colors!" in the middle of this activity; I'd say he owns that word now), a world map to explore colors' meanings around the world, and changing the colors in an abstract painting to create their own work of art. Whether observing or doing the activity with a partner, the children's excitement was audible.

This program needs to be used with supervision. I still have not discovered a delicate way to deal with nudes, and like any good museum, there are lots of them here. I suggested to my students that they click away from any image that made them uncomfortable. I also only used this program with more mature members of each class to avoid the "oooh, he's nekid!" controversy. Know your students, and preview all art software thoroughly before use. Classroom teachers using this program might want to discuss these issues with their art teacher to see how it was handled in the past.

The navigation screen from "With Open Eyes."

This program froze on me more than once. Make sure you turn off unnecessary applications and have at least 8 MB RAM available. Everything loads fast enough, with no blank screens; however, if you goof up or get lost, it will take forever to find your way again unless you cut out through the Index. It is wise to spend some time just clicking all over the screens to see how to get from place to place. My students needed my help navigating, even after viewing the tour and listening to Tim.

I personally would have liked an exit lock like Edmark's *Thinking Things* series provides. I had students exit for no reason, and the credits roll on forever, even when you click to speed it up. Perhaps a future edition could provide an adult folder to allow record keeping, difficulty level settings, defaults, and similar customizing features that make teaching easier.

If you are looking for a way to reinforce art concepts with older, English proficient students, or you just want to mess around, this is a great program, and I highly recommend it. Anything with Munch, Dali, Kandinsky, Hopper and Escher can't be bad!

Now for Some Teacher Talk

• Yes, these CD-ROMS all require a double speed drive. (I recommend an even faster one). That little Yugo you've got won't cut it anymore.

• If you have a lab situation available, use these programs together. Often, since they draw on different collections, one may have a work that another does not. *With Open Eyes* has Dali's "Mae West," while *ArtRageous* has his "Persistence of Memory." *With Open Eyes* has Munch's "The Cry," a lithograph that led to the famous oil painting, "The Scream," which appears in brilliant color with animated descriptions on *ArtRageous*. I loved discussing surrealism, expressionism, and what media means with two little kids.

• Use inter-curriculum connections. There is a plethora of vocabulary in these three art programs. The images and activities encourage the use and acquisition of vocabulary, and the expression of opinion and emotion. Works of many cultures can be accessed for use during units on African-American or Hispanic History, for example; maps provide a helpful geographic base. The databases are accessed easily enough to be used for research. All three programs have music as an element. Timelines can be analyzed for trends, and students can create timelines of their own work during the school year. Use your imagination. *(continued on page 18)*

MINSPEAK™

(continued from page 1)

The Early Years: Before Augcomm

I have always lived in the same household as my parents and younger brother. My family strongly built my desire to express my wants, needs, and ideas by including me in all the communications as a member of the family. We have a lot of very interesting stories about how I got my point across when I was a little kid. The story that really interested me is how I pointed to items in the sales flyers that came in the newspaper every Sunday morning. Other stories I heard from my parents made me interested in my early childhood communication and the problem solving efforts I employed to express myself. I used to sequence objects together as a means of expressing my point to whomever was around at the time. I guess that's early *Minspeak*™ for you - putting pictured objects together in a sequence to convey the meaning of an idea or word. One of my early speech therapists tells of how I was a creative manual board user because I would put together symbols for one meaning, as well as use sources available at the time to make a point.

When my parents discovered that I had the ability to communicate a single point to people, they then consulted my therapists and education specialists at the rehab hospital to expand on this idea. I started using a manual communication board with six symbols. Soon I advanced to boards with more symbols, the alphabet and numbers. While this was going on, I was developing into a well-rounded communicator, putting together multi-word sentences. During this time, I was enrolled in an integrated preschool at the University of North Dakota and began interacting with other children. This experience helped me to develop socialization skills for communicating with my peers.

Inclusion and Technology

When I reached school age, I was included into a regular classroom with an aide to help me. I also spent time in a resource room working on some of the harder subjects for me, like reading and spelling. We also began working with computers and other special technology, which back in 1983 was new to all of us. It was just like jumping in with a life jacket and saying "Let's swim!" to see what's out there to help Anthony. It was and is very important that everyone work together - speech therapists, occupational therapists, physical therapists, teachers, parents, etc.

During first grade we decided I would be perfect for a voice output device, so we started looking at what was available. We wanted to find a system that would allow me freedom of speech and would also have good quality speech output. We first saw a *Touch Talker*™ with *Minspeak*™ (Prentke-Romich), along with other voice output devices, at Children's Hospital in Sioux Falls, South Dakota. The *Touch Talker*™ really stood out in our minds. It had a good voice output system, plus it enabled me to put symbols together in a sequencing format similar to what I was already doing. We liked that it had an LCD for others to read if they could not understand me. Another nice feature was that it could be hooked up to a printer. I believe voice output helps not only in communciation but in spelling, reading and language skills.

In December of my second grade year, I finally got my *Touch Talker*™. I recall that as the happiest day in my childhood. I was given the power to communicate something without having to depend on somebody to read my communication board. For the next couple of years, I was seen by two speech therapists who helped me build my vocabulary on *Minspeak*™. At that time there were no pre-programmed vocabulary packages. This process called for that all-important input from the whole team who was working with me.

Learning To Use Minspeak™

My speech therapists assigned me homework for programming words, sentences and names of my peers. We used a grammar-like approach. For example, to program "I want to go swimming" I would select the 'II' icon for *I*, the 'holiday verb' icon for *want*, the 'think preposition' icon for *to*, the 'go verb' icon for *go* and the 'pool verb' icon plus 'ing' for *swimming*. Back then I hated those assignments, but I realized when I got older that they were given to me to show me that I could program my device anytime I felt the need for another word, phrase or sentence. After a few years my vocabulary was up to age level. During this time, my family instilled in me the importance of having my communication device with me at all times. Always having my device with me is like somebody wearing their eyeglasses.

My parents started noticing a big difference in their communications with me. While we were traveling to visit family two and a half hours away from Grand Forks, I had my *Touch Talker*™ with me. This was the first trip that my mother didn't have to get up and read my communication board. Everyone was very happy that I could hold a conversation while we were driving.

Minspeak™ helped me maintain age level vocabulary. Therefore, I was included for all of my classes. As seventh grade rolled around, you couldn't have noticed any difference between the other kids and me. I also developed a system of making phone calls to my friends, and to this day I still live on the phone. I really believe that without *Minspeak*™, I couldn't do this very basic task of making a phone call.

Upgrading to a Liberator™

During my eighth grade year, I got a *Liberator*™ (Prentke-Romich), which had come on the market during the summer before. The *Liberator*™, an upgrade of the *Touch Talker*™, makes *Minspeak*™ an even more powerful tool. Since I upgraded to that system, I have been totally independent in my communication needs. Having unlimited communication capabilities both in and out of the classroom helped my teachers in my education process and enabled me to expand my horizons.

My First Job

During my high school years, I obtained a part time job at a local computer store producing typewritten manuals and catalogs. This would never have been possible without the aid of my *Liberator*™. My augcomm device helped me explain my special needs to my boss and co-workers. Having a job also entered me in the business world, something else for which you need good communication skills. I credit my *Liberator*™, *Minspeak*™ and built-in *DecTalk*™, the high-quality speech synthesizer, for this success, because I believe this would not have happened unless I had a speaking device with great speech output. I only

hope that this is just the beginning of my business success with the aid of *Minspeak*™ because we both have a lot to offer people in general.

I'm Off To College!

I graduated from Red River High School in May, 1996. In November I received my acceptance letter from the University of North Dakota. I started college on January 8, 1997 and plan to major in computer science or something in that field. It looks like my childhood dreams have come true. I'm very excited to be a college student back where I started when I was 2-years-old. My long term goal is to work somewhere where I can help other people with disabilities with the aid of computer technology and/or speaking devices and make them productive citizens. My personal experience shows me that with a little special technology like *Minspeak*™ and hard work, anything can be done if one has the determination to do it.

For information on Prentke-Romich products, call them at (800)262-1984.

ΔΔ

Anthony Arnold is a freshman at the University of North Dakota. He first presented his story at the Annual Minspeak Conference in May, 1996, and it was published in the conference proceedings (Prentke-Romich).

TECK TREK

(continued from page 3)

with the authoring program, *HyperStudio* (Robert Wagner Publishing). Students work in pairs to create a three card autobiographical stack. They receive an overview of the basics of *Hyperstudio*, how to add clip art and how to move from one card to another. They also learn to add clip sounds or their own sounds. The final stack includes the student's name, a map of the country and state where they were born, an autograph and clip art illustrations that describe them.

At the third station, the students use a program called *VCR Companion* (Broderbund) to create a videotape production which includes titles and live film. They work as a group to learn the basics of working with a video camera, how to add titles using *VCR Companion*, and how to use storyboarding to properly design their skit and put the entire project together.

At the fourth station the students create a 16-frame sound "filmstrip" on a state. They answer questions about their state in the form of a script. The script has cues for advancing the filmstrip already included. The students use overhead markers to illustrate an actual film strip. They are given certain requirements such as a map of their state and the state capital. For the final project, the students make an audio cassette of the script that corresponds to the film strip they have illustrated.

As a culminating activity for the Level III course the 6th grade students return to the library for a fifth period and are allowed to choose one station at which they felt they did their best work. They then present their work to the entire class. According to Mr. Courtney, "You really get to see the creativity of some of these students."

Trained Peer Facilitators

One of the most exciting parts of this program is the use of peer facilitators. Students are either recommended by their teachers or chosen by Mr. Courtney to work as peer facilitators. Throughout the year Mr. Courtney may train up to seven groups of facilitators in an attempt to include as many interested students as possible. The students receive a full class period of training and then they put in a week of constant practice during their 8th period study skills class. They work with an outline of the requirements for each station and practice demonstrating the needed skills for that particular station. Mr. Courtney is making an effort this year to include special education students as a way to increase needed self-esteem and social skills. Two of the students from 6th grade teacher Mary Beth Penkethman's class were chosen because as classified students in an inclusion classroom she believed they could benefit from this type of peer interaction. "This is the type of setting where they can really excel, they seem to have a real affinity for the technology, and this has given them a chance to assume a position of authority and teach others."

The ultimate goal upon completion of Teck Trek is for the students to use what they have learned through the course as part of a research project. They may, for example, use a poem they found utilizing *Granger's World Poetry Index*, or work as a collaborative group to create a videotaped presentation.

The response to the course has been overwhelmingly positive. The program is beginning to receive attention outside of the district as well. Mr. Courtney has presented his program at conferences of the Educational Media Association, the Educational Technology Association of New Jersey, and the New Jersey Education Association. He will also be presenting at the International Reading Association's spring convention. Through his efforts, students at the West Windsor-Plainsboro Upper Elementary School are one step closer to successfully navigating the rapidly expanding world of multimedia.

Product Information:

SIRS Discoverer
(800)232-SIRS
Initial license $650, annual renewal $475

Accelerated Reader Computerized Reading Management Program
Advantage Learning Systems, Inc.
(800)637-6581 Approx. price: $1,400

Middle Search CD-ROM
EBSCO Publishing
(800)653-2726 Price: $899

Columbia Granger World of Poetry Index
(800)944-8648 Price: $695

MediaMAX CD-ROM
Videodiscovery, Inc.
(800)548-3472 Price: $199

Encyclopedia of Animals
Laserdisc Corporation of America
avail. from Laser Learning Technologies
(800)722-3505 Price: $675

Compton's Interactive Encyclopedia
Price: $69.95 &
HyperStudio (Roger Wagner Publishing)
Price: $112.95; 10-user Lab pack $795
both are available from Educational Resources
(800)624-2926

VCR Companion (discontinued item)
Broderbund
(800)474-8840

ΔΔ

Kathleen Foster is a graduate student in the Departement of Special Education at The College of New Jersey.

SOFTWARE REVIEWS

IN MY OWN VOICE

by JoAnn Pelliccio

SUBJECT AREA: Multicultural Education, Poetry Appreciation and Poetry Writing

PUBLISHER: Sunburst Communications, Inc. (800)321-7511

COST: $79.00

INTENDED AUDIENCE: Junior High/High School

NOTABLE SYSTEM REQUIREMENTS: 68030 Macintosh or higher, System 7, Double-speed CD-ROM drive, QuickTime 2.1 or later, Sound Manager 3.1, and Sound Control Panel 8.0.5 or later.

DESCRIPTION: This CD-ROM contains audio recordings of award-winning contemporary American poems read by the poets. There are 27 poems on the subject of identity, survival and hope written by nine poets of culturally diverse backgrounds.

The setting is New York City's Greenwich Village. The program opens with video and jazz and a narrated introduction by Quincy Troupe, one of the poets. A New York City lamp post serves as the menu bar and offers many choices:

1) A trip to Eastside Books simulates the environment of a poetry reading. Students can hear the poets read three of their poems while following the text on the screen. Each poet has a book on the book shelf which contains a picture of the poet, a brief biography and selected poems. Clicking on the poet's picture activates a screen in which the poet discusses how and why a particular poem was written. Annotated balloons which describe poetic devices such as simile or alliteration appear over appropriate sections of the poems.

2) Students can visit The Sun Gallery, a simulated Greenwich Village art gallery, where poems are presented in connection with thematically-related pictures. The poetry-related art emphasizes theme, imagery, and the connections between poetry and the visual arts.

3) WriterSpace contains clickable objects: a Word Generator, a tape recorder, a book, and a computer. The Word Generator creates original word combinations which the student can manipulate. The tape recorder provides the student with four types of music that will play in the background while using *In My Own Voice*, and it also allows the students to record their own poetry reading. The book transports the student to the Book Shelf of Eastside Books where they can access the poets and the poems. The computer is a built-in word processor allowing students to edit the poems in the program or write their own poetry.

4) The Notepad feature allows students to record their thoughts and feelings. It helps students navigate through the program and provides a reference source for tracking the precise place the students are in the program.

STRENGTHS: This program is easy to use and very engaging. There is a Teacher's Guide with lesson plans for whole class activities, individual students or small groups. The lessons are divided into units by poet and contain additional biographical information and ideas for writing assignments.

There are many possible applications for this program. It can provide an art experience, a writing experience, and lessons in social studies and multicultural education, as well as poetry appreciation lessons.

The major strengths of this program are its powerful presentations of contemporary poetry to students and its providing of a safe place for students to be able to express their thoughts in words. The poets recite their poems exactly as intended and describe not only the meaning of the poems, but also the writing process. This offers ideas and encouragement for students to attempt their own poetry.

SUMMARY: *In My Own Voice* is a truly beautiful multimedia experience of art, music and poetry. Because of the cultural diversity presented in this program, whether a student is inspired by the art, the music, the poetry, or the poets themselves, this program is bound to have a profound effect. The program can be used across curriculums and, that, combined with its reasonable price, makes it an appropriate and affordable addition to school software collections.

THE POETS AND THEIR WORKS

Miguel Algarin: "On Eleventh Street, Barrio Obrero. (September 11, 1941)," "In Santurce's Light," "At the Electronic Frontier"
Lucille Clifton: "on the inner city," "light," "this morning"
Joy Harjo: "New Orleans," "White Bear," "Remember"
Stanley Kunitz: "The Portrait," "An Old Cracked Tune," "The Layers"
Li-Young: "The Gift," "Mnemonic," "I Ask My Mother to Sing"
Pat Mora: "Senora X No More," "Immigrants," "Elena"
Naomi Shihab Nye: "Famous," "West Side," "Walking Down Blanco Road"
Linda Pastan: "Grudnow," "Rachel," "Subway"
Quincy Troupe: "My Poems Have Holes Sewn into Them," "The Old People Speak of Death," "Passing on the Legacy"

JoAnn Pelliccio is a graduate student in the Department of Special Education at The College of New Jersey.

EXPRESSION

by Deborah Newton

SUBJECT AREA: Language Arts

PUBLISHER: Sunburst
(800)321-7511

COST: $99.00 single copy, 5 computer Site License $198

INTENDED AUDIENCE: Grades 3-12

EDUCATIONAL GOALS: *Expression* is designed to help students organize their ideas and to facilitate the writing process.

DESCRIPTION: *Expression* is a flexible, easy to use graphic organizer. Its three major components - a Graphic Screen View, a Text View, and a Word Processor View - support organizing and planning for process writing as well as other cross-curricular activities.

In the Graphic Screen View *Expression* helps transform brainstorming into a visual, non-traditional outline. Students create graphic plans using frames, tie-lines, and notes. A click of the mouse creates frames in any of 12 geometric shapes, to which brief text and/or pictures can be added. Students customize their plans by selecting the style, color, font, and size of text and importing graphics from the library provided. If lengthy text is desired, it can be added as notes by clicking on the note icon in the desired frame. Frames are then connected by tie-lines which add structure to the plan.

Selecting Text from the View menu allows users to see their graphic presentation converted into a traditional text outline that utilizes the text from frames and notes. The levels of the outline are determined by the order in which tie-lines were drawn, but the order can be rearranged, if desired. When the writer is satisfied with the text outline, selecting Word Processor from the View menu will change the outline into a word processing document that can be edited and expanded into a final paper.

This program offers speech feedback in each component as an additional support to students. Users can select the voice the computer will use to read the text. This speech feedback enables students with reading difficulties to access text written by others, or to hear their own work read back to assist with editing tasks.

STRENGTHS: *Expression* supports students who are not linear thinkers by interpreting their graphic plans and presenting them in outline form. It also supports students with reading difficulties, or those who are strong auditory learners, by providing speech feedback. Being able to switch back and forth effortlessly among the three views is a helpful feature. *Expression* allows printing from the Text, Graphic, and Word Processor Views. Teachers can capitalize on this by creating webs and concept maps that can be printed and completed by students. An extensive teacher's guide offers detailed activity plans and also addresses the mechanics of using the program.

WEAKNESS: Because of the many options provided, younger students or those with learning difficulties may require extensive practice before they are able to use this program independently.

SUMMARY: This graphic organizer is a valuable tool for both teachers and students. It is useful for facilitating the writing process as well as for planning and organizing activities across the curriculum. It is suitable for use by individual students or small groups, or for teacher-directed, whole class activities. The variety of options allows users to customize their work for maximum effectiveness.

WRITING PROGRAMS FOR YOUNGER CHILDREN

EasyBook (Sunburst) (800)321-7511
Price: $79

Another writing program available from Sunburst is *EasyBook*. This program simplifies the book making process so that even students in kindergarten can author and publish stories in book form. Automatic page layout makes *EasyBook* hassle-free for young students while more advanced students can quickly and easily customize the layout if desired. A collection of hundreds of stamps and a built-in paint program make it easy to create illustrations to match the text. In addition to providing instructions for using *EasyBook*, the teacher's guide includes writing activities for grades K-6, tips for book binding, and a variety of reproducibles.

Stanley's Sticker Stories (Edmark) (800)362-2890
Price: $59.95

Part of Edmark's Early Learning Series (preK - 2), *Stanley's Sticker Stories* lets students create their own animated storybooks featuring Millie, Bailey, and other popular Edmark characters. Readers and non-readers alike can tell their own stories with over 325 stickers of familiar friends, objects and colorful backgrounds. Animation, sound effects and music bring these stories to life. Children can even record their own voices and hear themselves narrate their story.

Deborah Newton is a graduate student in the Department of Special Education at The College of New Jersey.

THE MAGIC TALES COLLECTION: BABA YAGA AND THE MAGIC GEESE, IMO AND THE KING, and THE LITTLE SAMURAI

by Marta Isaacson

SUBJECT AREA: Children's Literature, Multicultural Education, Language Arts

PUBLISHER: Davidson
(800)545-7677

COST: $59.95

INTENDED AUDIENCE: Ages 3 - 9

SPECIAL HARDWARE REQUIREMENTS:
IBM: Windows 95 with 8 MB RAM or Windows 3.1 with 4 MB RAM, double-speed (2X) CD-ROM drive, and Windows-compatible sound card.
Macintosh: System 7.1 or higher, 6MB RAM with 3 MB free, and double-speed (2X) CD-ROM drive.

EDUCATIONAL GOALS: To encourage reading and listening skills, while learning about different cultures, customs and peoples.

DESCRIPTION: *The Magic Tales Collection* consists of six tales which have been taken from different cultures, three of which are reviewed here. The main characters are rewarded for their courage and effort in demonstrating responsibility to others. In *Baba Yaga and the Magic Geese*, a Russian folk tale, a young girl saves her brother from a wicked witch. In the African tale, *Imo and the King*, a boy is able to pass three tests of the King with the help of friends whom he makes through performing generous acts. *The Little Samurai*, a Japanese folk tale, presents us with a small boy standing up to an ogre and growing bigger by his unique act of kindness to a young princess.

Each story is presented by "Grandpa Mouse" who provides three options: 1) A child may have the story read directly by Grandpa Mouse while the words are highlighted onscreen, 2) The child may play with the story by interacting with each scene, clicking on objects to see animals talk, objects change colors, and statues come to life, and 3) The final option allows the child to go to any specific page.

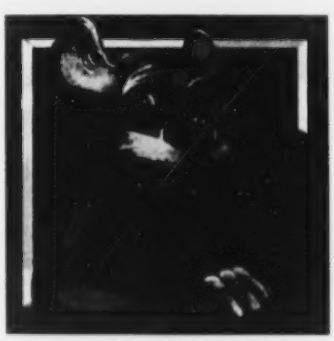
STRENGTHS: These interactive stories are wonderful. The colors are lush and bright. The music is upbeat and snappy. All of the scenery appears true to the cultures depicted. The way the objects move after being clicked on in the "Play" mode are whimsical and humorous to both child and adult sensibilities. The stories are folk tales which are at times larger than life. The moral lessons are presented with positive consequences for ethical behaviors. Each CD-ROM comes with a copy of the story book and an extensive classroom activity guide for teachers.

The first screen from *Imo and the King*.

WEAKNESSES: A faster CD-ROM drive may eliminate the problem of the dark blank screen that comes on between scenes and lasts several seconds. Children may need to be reminded to wait. It would be helpful if the words of the songs played within the scenes were displayed on the screen along with the story text.

SUMMARY: *The Magic Tales Collection* is delightful in every aspect. The activities are fun and interesting for the children and the programs are easy to use. The technical aspects of color, music and story mesh beautifully. Support for parents and teachers is excellent.

Marta Isaacson is a graduate student in the Department of Special Education at The College of New Jersey.



BIG:CALC

by Cynthia Ruetsch

SUBJECT AREA: Math

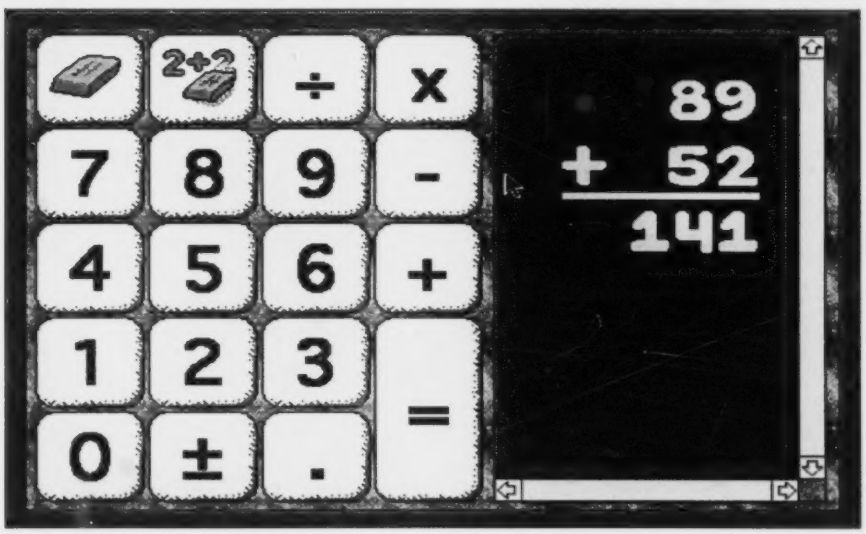
PUBLISHER: Don Johnston Incorporated
(800)999-4660

COST: $29

INTENDED AUDIENCE: People with learning, visual or physical disabilities.

OPTIONAL HARDWARE FOR ALTERNATE ACCESS: *TouchWindow* or single switch with Macintosh Switch Interface or *Ke:nx*.

EDUCATIONAL GOALS: To develop calculator skills for completing group math work, checking answers and completing basic calculations and to provide calculator access for students who cannot use standard hand-held calculators.



DESCRIPTION: *Big:Calc* works like an on-screen calculator with the addition of large, colorful numbers and speech output. It can be used alone or with database and spreadsheet programs. Students can choose one of six calculator styles: phone pad, number line, giant calc, keyboard, business calc, and pyramid. Each layout can be customized by selecting various button fonts and sizes and color combinations for the background, keypad numbers and answers. Additional custom options include:

(1) Voice output - Users can choose from a variety of voices; adjust the rate of speech from 50 to 500 words per minute; and select items to be read (e.g., speak buttons, speak numbers, speak results, etc.)

(2) Math menu - Users can select the way the math problems are calculated and displayed, e.g., show 1000's separators, show currency, set the number of places to the right of the decimal point for your results to be rounded to.

(3) Alternate computer access - Users can choose from touch screen, single switch, alternate keyboard, or other similar devices.

STRENGTHS: The custom options makes this a great program for students of all ages, abilities, and support needs. Students can complete their calculations using the keyboard and/or mouse depending on their preference. Math problems ranging from simple addition and subtraction to currency and numbers involving decimals and negative integers can all be calculated with ease. The ability to customize the font type and size and the color scheme provides students with vision impairments easy access. Finally, the voice output options offer the additional auditory support that is beneficial to many students.

WEAKNESSES: The quality of voice output will depend on the computer's capability to support this feature. Some voices were found to be very clear at low voice rates, however, numbers like fifteen and fifty tended to sound the same and would therefore be somewhat confusing to blind students relying on the voice output.

SUMMARY: Overall, students of all ages would find *Big:Calc* appealing. The various display options allow for individual preferences while providing easy access for students who may have difficulty with typical hand held calculator models.

Cynthia Ruetsch is a graduate student in the Department of Special Education at The College of New Jersey.

BEST COPY AVAILABLE

WORDS AROUND ME

by Orah Raia

SUBJECT AREA: Functional Vocabulary Development

PUBLISHER: Edmark
(800)362-2890

COST: $399 list (includes 2 copies), or $799 for a 10 copy lab pack

GRADE LEVEL: PreK to Adult

NOTABLE SYSTEM REQUIREMENTS: Mac only; minimum 68030 processor; 8MB highly recommended; minimum 2X CD-ROM drive. Optional: Printer to print student records and flash cards, *TouchWindow* or switch for alternate access.

EDUCATIONAL GOALS: To help students learn to identify 275 vocabulary words, plus plurals for a variety of categories related to daily living, which include Personal, Kitchen, Home, Outdoors, School, Community, Colors, Shapes, and Verbs. In addition, students develop memory, listening, categorization, comparison, and visual perception skills.

DESCRIPTION: The program is made up of the seven Word Collections identified above. Each Word Collection contains 40 words, in 10-word sets. Each 10 word set is presented through flash cards in 5 cycles: Word Identification, Plurals, Categorization, Sameness, and Difference. Once the Question and Answer period is over, there is a 10 Word Review, followed by a Review Game. Students can choose from an option of three different games which include: Hide and Seek, in which the association between the sound of a word and pictures representing the word is reinforced; Make A Match, for which students match pairs of pictures in a memory game; and Picture Puzzle, in which students build spatial awareness and visual closure skills. After the 40 Word Collection is completed, students play a cumulative 40 Word Review. An animated character (Greenie) is on the screen and provides reinforcement when the student gives the correct answer.

STRENGTHS: Greenie provides fun and entertainment to this program, and young children will get a charge out of the many different forms he takes on. The program includes an Adult Options Section which provides an opportunity to individualize the program according to students' abilities. Teachers can select from 3 difficulty levels, choose English or Spanish, turn off the text labels, turn off the animation character, and adjust the number of incorrect words before a "teacher alert" comes up on the screen. The program also includes capability for single switch input and touch screen. The ability to see student record cards and print them, and an option to print flash cards, which enables carryover for home instruction, are valuable features.

WEAKNESSES: This program is recommended for PreK to Adults, and is quite flexible, but it is missing one important option which would have extended its uses and made it an excellent program for older students. This is the capability to eliminate the pictures from the flash cards; such a feature would turn the program into an excellent tool to increase sight word recognition.

SUMMARY: This program is well-designed, motivating for students, and flexible, providing many customizing options for teachers. Its unusually high cost would be justified if the program were expanded to include the teaching of sight words.

Orah Raia is a graduate student in the Department of Special Education at The College of New Jersey.

Adventures in Artland

(continued from page 11)

• Do not be afraid to use software for a lower age group with your ESL/Bilingual classes. I have two reasons for this. One, the programs allow them access to art information in an understandable form, whether in simple language or without much language at all. Two, my bilingual students, who vary from fourth to sixth grade, from port-of-entry to regular education, had no problem saying they were finished, or bored, or thought something was "like a baby game." Tell your students how they can let you know about those feelings; that is part of learning a new language, too.
• Be available or monitor use of these programs. If I get lost in *ArtRageous*, they will too. Trust me, Tim will leave you hanging.
• Take some time to sit and play with these programs before you use them, or you will end up having to explain to your first graders why God is pointing to that naked man in the clouds.
• The help folders really do.
• If you have mature students of any age (read: has common sense) who are interested in art, let them play around with one of these programs while you watch. You may find that the student gets the hang of it faster than you would have, and kids love to teach their teachers. Who do you think explained *With Open Eyes* to me?

Product Information:
•*ArtRageous! The Amazing World of Art* (Softkey)
Available from Educational Resources (800)624-2926
Price: $34.95
•*look what i see!* (Metropolitan Museum of Art) (800)468-7386
Price: $39.95
•*With Open Eyes* (Voyager)
Available from Educational Resources (800)624-2926
Price: $27.95

Donna Williams is an alumna of the Department of Special Education at The College of New Jersey.

TO REQUEST A TECH-NJ SCHOLARSHIP APPLICATION: Please list below the names and addresses of anyone interested in receiving an application for graduate scholarships in the Department of Special Education at The College of New Jersey.

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Scholarships Available for Graduate Studies in Special Education

Through a Personnel Preparation Grant from the U. S. Department of Education, Office of Special Education and Rehabilitative Services, the Department of Special Education at The College of New Jersey is pleased to announce that scholarships are available for the 1997 - 1998 academic year. Applicants must demonstrate an interest in educational technology, as well as be interested in pursuing a masters degree in special education. To request a scholarship application package, please complete and return the request form on page 19, call (609)771-2308, or e-mail your request to technj@tcnj.edu.

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TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

The College of New Jersey School of Education
Department of Special Education

Spring 1997, Vol. 8. No. 2

SPECIAL FEATURE: MATH SOFTWARE

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SELECTING SOFTWARE: WHERE DO I BEGIN?

by Amy Dell and Anne Disdier

"What software should I buy?" "Which programs would you recommend for my school?" "What's the best program for teaching ___?" In countless telephone conversations and meetings with teachers and parents, we are asked this kind of question more than any other. People get frustrated when we respond that it is impossible to answer these questions with a simple list of titles, but there is no perfect program that works for everyone. *Major League Math* (Sanctuary Woods), for example, which is reviewed on page 14, is an inventive, highly engaging math program for upper elementary and middle school students *who love baseball*. For students who have no interest in baseball, however, the program would be a poor choice. Those students will not be motivated to solve the math problems and may find all the baseball features distracting and confusing. This does not diminish the quality or value of the program; rather, it underscores the point that different people respond to different kinds of software programs.

Selection Guidelines

There are thousands and thousands of software programs available. How does a teacher or parent decide which programs are best for their students/children? There are several key issues which need to be considered. Over the years we have developed guidelines which **TECH-NJ** writers use when they are reviewing software. These guidelines were used in the reviews of math programs which are featured in this issue. We thought it would be helpful to publish these guidelines to help our readers muddle through the software mire.

1) The content of the software program must **match the curriculum**. What is the subject to be taught? More specifically, which skills within that subject do you want the software to teach? For example, in this issue of **TECH-NJ** we review several programs that are categorized as math software. But which math skills do your students need to work on? If it's basic computation, you may want to look more closely at Davidson's *Mega Math Blaster* (page 12) or *Stickybear's MathSplash* from Optimum Resource (page 18), but if your students need to practice their problem solving skills, *Snootz Math Trek* (Theatrix, page 13) or *Mighty Math Zoo Zillions* (Edmark, page 16) would be a better match.

2) The program should offer features which allow you to **customize** the program to meet your students' specific needs. You want to be able to select or modify the **level** of the material presented. You also want to be able to customize the program's **content**. In *NumberMaze Challenge* (Great Wave Software, page 18), for example, you can specify both the grade level and the content of each math skill covered, and a simple menu option allows you to move easily to a higher or lower level. In *Major League Math* (Sanctuary Woods) you can choose from one of four levels, but there is no option to select the types of problems within each level (except for the "Rapid Fire" questions which can be customized). The ability to customize is especially important in special education where students often display uneveness in their skill levels.

3) Software needs to **match the strengths/weaknesses of students** with special needs. How does the program

(continued on page 9)

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TECH-NJ:
Technology, Educators, & CHildren with disabilities-NJ

TECH-NJ is an official publication of the School of Education, Department of Special Education at The College of New Jersey. It is written by students and faculty and is designed to support professionals, parents, and computer-users in their efforts to use technology to improve our schools and to enhance the lives of people with disabilities. In order to facilitate local networking, emphasis is placed on resources and innovative practices in and around the New Jersey region.

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TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

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EDITORIAL

Like many assistive technology-enthusiasts, the **TECH-NJ** staff feels passionately about the potential of computer technology to improve the lives of people with disabilities. Sometimes, however, the lack of enthusiasm for assistive technology demonstrated by the actions of school districts, funding agencies, and others who "don't get it" seeps into our consciousness and starts to drag us down. We tend to lose sight of why we became advocates for the integration of assistive technology in our schools in the first place.

Fortunately someone usually comes along who reminds us of the importance of our work. In this case, that someone was a graduate student at TCNJ who explained in an essay why she was interested in participating in the TECH-NJ project. The following piece is printed with the permission of that student, Theresa Lupo.

I am interested in furthering my skills in education and assistive technology because of a note to mom and "Bojamma the Moose." During my student teaching experience at the Alfred I. DuPont Institute Children's Hospital, I began working with an eight-year-old student named Denise. Denise had been in the hospital for over a year following a series of strokes that caused her to become quadriplegic. She was learning to use on-screen scanning with a switch mounted under her chin to read a story and answer multiple choice questions for the MECC series, "*Tim and the Cat.*" She was excited that she was able to do what the rest of her classmates could. Soon, she tried an alphabet scanning array with a word processing program. For the first time in almost a year, Denise had access to an independent method of written communication and typed a note to her mom.

To a chorus of groans, I distributed a writing assignment to my Computer I class at Community High School, a private school for students with severe learning disabilities. I had given them the first paragraph of a story and asked them to write the next five sentencces. After half on hour, seven of the eight students had completed the assignment using *MacWrite* and spellcheck. I allowed Bobby, a tall, energetic freshman with dyslexia, learning disabilities and Tourette's Syndrome, an extension. The following day he explained that he just was not finished with his story "Bojamma the Moose" and requested more time. About two months later, this student, labeled a "non-writer," watched his completed story spool from the dot-matrix printer, wrapped himself in the 30 pages of text and exclaimed, "I WROTE this!"

Technology provides access, motivation, independence and increased self-esteem for many special needs students. I have seen other students with disabilities, especially those who have previously met with academic failure, defy their "labels" using technology. While I am uncertain as to where my next classroom will be, I am sure that I will integrate technology into my lessons. I have seen the impact of my limited repertoire of skills, and I believe that increasing these skills will enable me to help an even greater number of students achieve their goals.

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USER PROFILE

TECHNOLOGY'S ROLE IN THE EDUCATION OF A BLIND STUDENT

by Theresa Lupo

When I asked Serena Cucco what the best thing about her laptop computer was, she replied emphatically, "Computer games! I like *Mobius Mountain* (Personal Computer Systems (PCS)), a math game. You try to solve math problems in cold, damp caves. I have another game called *AnyNight Football* (PCS). You get to choose the plays. I like football. I used to play T-ball, too, when I was younger. You could say I'm a big sports fan." Of course, what 13-year-old 6th grader doesn't enjoy computer games? I couldn't help but wonder, though, how do you play computer games if you can't see the screen? Serena has been blind since birth.

Computer Games for Blind Users

Serena's mother, Carol Castellano, explained that the Personal Computer Systems games use sound rather than visual displays. She described one of her family's favorites, *Bowling* (PCS). To a background of bowling alley noise, the player hears a tone indicating the prime stance for a strike and presses "go." Then the player listens to a series of tones and tries to match it with the first. When she identifies it and presses enter, she hears the ball roll and crash into the pins and receives a score.

"Personal Computer Systems games have been designed by blind people. My kids just adore them. The games really help develop hand-ear coordination." Carol added, "Although there are many programs that provide access to the screen for blind users, educational programs and games for the blind are relatively few."

Technology has provided Serena access to more than just computer games, however. It has contributed to her success in school, as well. She received her first low-tech piece of equipment, a manual Braille writer (Perkins), when she was 3 years old. This device allowed her to produce written text in Braille. Since the age of five she has been included in regular classes at her local public school.

Integrating a Computer in 2nd Grade

As a second-grader, Serena learned touch typing and began to operate an Apple IIe computer that was equipped with a screen reader, a speech synthesizer and a Braille printer. Her teacher printed spelling lists, writing assignments and math lessons for Serena and her classmates simultaneously by connecting the computer to both the Braille and standard printers. The classroom aide also used the system to print written materials such as announcements, Valentine's Day cards, the program for the school play, and the teacher's grading comments, which she would staple to Serena's work.

The following year, Serena began changing classes and needed a more portable method of writing. While her classmates learned handwriting, Serena learned the handwriting of the blind using a slate and stylus. This simple device enables individuals to produce Braille by hand.

At this time her parents and teachers began to consider high-tech options. They decided on a laptop computer with screen reading software and a refreshable Braille display (TeleSensory). A laptop computer from Compaq was selected because Serena already knew the QWERTY keyboard, and having a regular screen display would enable her teachers, who could not read Braille, to follow along as she wrote. Serena's mother also thought that a laptop would be easier to integrate in the future as Serena's needs changed. "I was excited to get a computer. It was cool to have something new to use," Serena added.

The talking computer made writing easier because she can check and correct her own work. Before, if whe made a typo, a sighted person would have to read it and correct. It has helped to increase her independence.

"Probably the biggest problem we encountered was getting all the components to work together. I think that anyone who has a complicated computer set-up will have that problem, and most blind people do. It took us a long time to get everything to talk to each other. I expect that that will happen again as we add more things," Carol stated.

Cost was also a factor in the selection process. The laptop and screen reading software were donated by a local service organization. Both Serena and her mother received computer training through the New Jersey Commission for the Blind and Visually Impaired. Equipment purchased by the Commission follows children to whatever school or program they attend, and therefore does not need to be included in the I.E.P. The school district has paid for the Braille printer.

Low-Tech Tools Also Have Value

Serena uses low-tech items provided by the Commission for the Blind and Visually Impaired, such as a Braille ruler, Braille versions of student text books, a talking calculator, a hand-held talking dictionary, (*Franklin Language Master 6000 SE*), and a Braille dictionary. "With the talking dictionary she can quickly look up the definitions, but she also needs to use the Braille dictionary to learn the syllabication and pronunciation markings. You can't do that unless you can see it right under your fingers. We felt that it was important for Serena to learn to do both. The Braille dictionary stays at school. It's definitely not portable; it takes up about 20 feet of shelf space!" Carol exclaimed.

She continued, "I believe that one of the skills that Serena needs is to know when to switch to different items to accomplish different tasks. There are times when she likes to use one thing and times when she likes to use another. For reports, she might Braille her first draft, check it, then write her second draft on the computer. A lot of sighted people would do that - hand-write our first draft, then type it on the computer. Sometimes she writes on the computer, then Brailles a

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USER PROFILE

TECHNOLOGY FOR A BLIND ADULT

by Pamela Haggerty

Jim Barnhart works at Bell Atlantic in Philadelphia as a computer programmer/analyst. He is in his late thirties and is visually impaired. He did not lose his vision until he was eighteen, when he was a college student majoring in Surveying Technology at Pennsylvania State University. As Jim remembers it, his whole world changed when he began to lose his sight. He had to drop out of Penn State for awhile. He reapplied as a computer science major but was counseled to change his major to Business Administration. In 1983, he graduated with a degree in Business Administration with a focus in Business Logistics.

Jim is very independent. He lives alone and commutes to work each day via public transportation. He avoids rush hour traffic by leaving his apartment at 5:30 a.m. and leaving work at 2:30 p.m. His only orientation and mobility aid is a cane. His hobbies include reading and cooking. People with visual impairments can borrow books from Recording for the Blind and Dyslexic in Princeton, which provides books on audiocassettes, and the Library of Congress which provides books on diskettes. Jim prefers borrowing books from the Library of Congress because he likes their selection.

Computer Set-up at Work

Jim uses an IBM 386 computer with a standard monitor, QWERTY keyboard, and a screen reading system. He has an *Accent-SA* text-to-speech synthesizer made by Aicom Corporation. The benefits of the *Accent-SA* (SA=stand alone) are that it is portable and battery-operated and has its own micro-processor and ROM so it does not take up any of the computer's memory. He uses the *Accent-SA* in conjunction with the screen reading software *JAWS* (Job Access With Speech) for DOS developed by Henter-Joyce, Inc. This software works with all of the DOS programs on Jim's computer. Jim likes this program because he can create macros to save time and can control how the voice reads the text. For example, he can program the voice to read acronyms like IBM. He has the same computer system at home with a modem. This is important because he does not like to stay at work late because of the difficulties with commuting during rush hour.

The most important piece of technology for Jim is his *Braille 'n Speak* by Blazie Engineering. He would be lost without it. *Braille 'n Speak* is a portable electronic word processor which uses Braille input, speech output and a built-in reverse translator. It has a talking calculator, calendar, clock and stop watch. Jim uses it to take notes during meetings, to write proposals, and to store addresses, phone numbers, recipes, and books. He can hook it up to either a Braille or regular printer. He can also hook it up to his computer and transfer files.

Technology at Home

Assistive technology also helps Jim with everyday tasks and entertainment. At home, he has a talking clock that announces every hour, a talking calculator, and a VCR with a voice coach remote. His favorite television channel is PBS which offers *Descriptive Video Service*. This service provides an additional voice which describes all the actions taking place on the screen.

For the most part, the assistive technology Jim uses is effective. He is able to do his job well. There is only one problem. Bell Atlantic is starting to put information regarding benefits and company policies on its internal network. Jim's computer does not have the capability to run Windows 95 which is required to run the screen reading program which can guide him through this network. Until Jim's computer is upgraded, he has to have coworkers read the information to him.

Jim wants to get an upgraded computer so that he can navigate through both Bell Atlantic's internal internet and the World Wide Web. He believes that assistive technology is indispensable; it has helped him maintain his independence and advance in his career. ΔΔ

Pamela Haggerty is a graduate student in the Department of Special Education at The College of New Jersey

PRODUCT INFO

Accent-SA Text-to-Speech Synthesizer
Aicom Corporation
(409)577-0370
$745 - $995

AnyNight Football - $30
Bowling - $30
Mobius Mountain - $20
Personal Computer Systems (PCS)
(908)826-1917

Braille Lite 40
Blazie Engineering
(410)893-9333
$5,495

Braille 'n Speak
Blazie Engineering
(410)893-9333
$1,349 - $1,399

Descriptive Video Service
DVS Home Video Catalogue
More than 140 videos available
(800)736-3099

JAWS (Job Access With Speech)
Henter-Joyce, Inc.
(800)336-5658
$495

Franklin Language Master 6000 SE
Available from Blazie Engineering
(410)893-9333
$450

Refreshable Braille Display
PowerBraille
TeleSensory
(800)286-8484
$6,095 (40 cell) - $11,295 (80 cell)

SOFTWARE FOR THE BLIND

pwWebSpeak

by Maryann Bowne

SUBJECT AREA: World Wide Web access for people who are blind or visually impaired

PUBLISHER: The Productivity Works, Inc.
(609)984-8044

COST: Commercial: $250; Government, Educational, and Non-Profit: $125; Visually Impaired: Free for personal use only, with a request that the user pay an annual subscription fee of $50.

SYSTEM REQUIREMENTS: Windows 3.1, Windows 3.11, or Windows 95; 3 MB of hard disk space and a recommended minimum of 8 MB of main memory. Speech Synthesizer: SoundBlaster card.

INTENDED AUDIENCE: Although primarily designed for people with visual impairments, *pwWebSpeak* is also intended for people with learning disabilities and reading difficulties.

DESCRIPTION: *pwWebSpeak* enables blind users to access headings and highlighted hyperlinks on a Web page. When finding what they want, they can jump from page to page like a sighted person. Text is displayed yellow on black for maximum contrast, and font size can be adjusted to meet the user's need. The default speech speed (180) is too fast and garbled for people not accustomed to it, but it can be adjusted to an acceptable pace. Slowing the speech rate improves clarity. There is also a volume control, including a mute selection. Images are not displayed on the web page, although the word "image" is voiced to let the user know of its existence. To verify the correct input, the speech synthesizer echoes all keyboard/mouse entries. Users can enter a particular WWW address and create a favorites list.

STRENGTHS: What was once totally off-limits to a segment of the population is now available. It is relatively inexpensive, does not require any specialized equipment and performs the basic functions needed to maneuver in and around the WWW.

WEAKNESSES: This software is not adapted to users who are touch typists so if someone is new to this software, they should be prepared to spend some time practicing using the Function/arrow keys. Although Help will tutor the user through each key, review will more than likely be needed. Despite slowing the speech rate, words were still garbled. The speech synthesizer read acronyms as words rather than letters, for example: CERF(Serf), rather than saying the letters C-E-R-F. Unless the user is familiar with the word pronunciation of the acronym, it is difficult to understand what is being said. A combination of word/letters spoken would aid comprehension. The speech synthesizer was inconsistent in its pronunciation of the Function keys. Sometimes it would say "Eff one zero"; other times it would say F10. The speech synthesizer also referred to the Function keys as the top row of keys yet neglected to mention the ESC key in that row.

SUMMARY: *pwWebSpeak* is functional. It is software in its infancy with great promise for future improvement. Two upgrades are due soon: first, *pwReader*, designed for people with dyslexia and people with some vision, which uses Microsoft's *Internet Explorer* to display Web graphics and *pwWebSpeak-PRO* which will allow voice commands to run the software. Second, versions for foreign languages (Finnish, French, German, Italian and Spanish) will also be available.

Maryann Bowne is a graduate student in the Department of Special Education at The College of New Jersey.

GOODFEEL
Automated Braille Music Transcription Service from DANCING DOTS

This software-based service is much quicker than traditional methods of translating computer music files into Braille. *Dancing Dots* can transcribe a printed score or MIDI or Lime notation files.

Fast: In most cases, braille music will be returned in a week or less!

Flexible: Music can be formatted according to a number of options, e.g. full score and separate parts. It can be transposed to a new key. Choose the number of lines per page and the braille cells per line.

Accurate: This translator has been designed to provide music Braille that conforms to the standards set by the Music Committee of the Braille Authority of North America.

Contact Information:

Dancing Dots
130 Hampden Road, third floor
Upper Darby, PA 19082-3110
Tel: (610) 352-7607 Fax: (610) 352-4582
E-mail: ddots@netaxs.com
URL: http://www.netaxs.com/~ddots

PROGRAM PROFILES

COMPUTERS HELP STUDENTS AND THEIR TEACHER AT MONCLAIR MIDDLE SCHOOL

by Orah Raia

As soon as you enter Steve Isaacs' classroom, you can tell his students know their way around computers and the Internet. Hanging from the walls are projects the students have finished, complete with materials and resources they have pulled off the Internet. It is also obvious that the teacher integrates technology into a great deal of the curriculum.

Steve teaches a self-contained classroom in a middle school in Montclair, New Jersey. His class consists of seven students classified as Educable Mentally Retarded (EMR), who are in 6th, 7th, and 8th grade. The students generally spend 5 periods out of 9 per day with him. They attend homeroom, physical education, two electives, and lunch with their non-disabled peers. Steve understands the importance of his students starting the school day in the same manner the other students do, with homeroom period. They attend either social studies or science in the general education classroom, where six of the seven students are assisted by two aides. Steve's goal for his students is to give them skills which will enable them to be competitively employed, to have jobs. Where are many jobs, he asks? In the computer field, such as in data entry.

There are only two old Apple IIGS computers in his classroom so the majority of the work on computers is done utilizing the seven computers available in the library. Steve is trying to acquire newer models for his classroom.

Teaching Reading

For teaching reading Steve uses *Reader Rabbit's Interactive Reading Journey* (The Learning Company), a software program in which students progress through 40 small reading books, moving on when they have demonstrated mastery of the previous book. Steve requires that in addition to working on the books on the computer, each student reads each book to either himself or the aide in the classroom to be sure they can read it without the assistance of the computer. This illustrates Steve's philosophy about technology in the classroom. It should be used to enhance what he is doing in all curriculum areas. He remarks, "Using computers for kids is so important. If it's just on paper, you lose a piece, and if it's just on the computer, you lose a piece. The computer utilizes a multi-sensory approach, providing both visual and auditory stimulation; for students with special needs this is very beneficial."

A Practical Class Project

Another application Steve has made use of is *Print Shop* by Broderbund. Every year during the holidays, the students design greeting cards. They then set up tables in the school during lunch periods and take orders, even allowing their "customers" to customize their cards. The students then create the cards according to their orders, print them out, fold and place them in bags, and distribute them. They use the proceeds for a pizza party. This project clearly develops skills in many areas: computer skills, math skills, interpersonal skills, and collaborative skills, and at the same time provides a nice product for the other students in their building to purchase during the holidays. I can't help but think that this demonstrates to the non-disabled students that the "special education" students are quite capable, hence reducing some of their stereotypical beliefs about people with disabilities.

Steve's students regularly work with the non-disabled students together in cooperative groups on the computer during Social Studies or Science classes. He points out that some programs, such as *Explorers of the New World* (Learning Company), enable his students to understand the content material without having to be readers.

Interactive Internet Assignment

On the Internet Steve's students have learned to perform searches using "Yahooligans" to explore sites. In addition, Steve uses the Internet to research sites and then has kids explore from there. A project the students are currently working on is called "All About Me." They are creating an autobiographical scrapbook that is done both on paper and on the computer using word processing and art programs. The projects are published online on a special section of America Online called Blackberry Creek. The work can be seen on AOL by typing keyword "blackberry," then clicking on "clubhouse," then "creekie kids scrapbook" and then the folder for Mr. Isaacs' class. Check it out! They have published other works on Blackberry Creek, Highlights and KidPub. The students find this especially rewarding!

Software for Various Subjects

In addition to these programs, Steve uses the following software in his classroom:

- *Time Town* (Steck Vaughn)
- *Bit Bot's Math Voyage* (Sancturary Woods)
- *Community Exploration* (Josten's Home Learning)
- *Trudy's Time and Place House* (Edmark)
- *Jump Start Series* (Knowledge Adventure)
- *P.J.'s Reading Adventures* (Microsoft Kids)
- *Mario Teaches Typing* (Brain Storm)
- *Mighty Math Series* (Edmark):
  - *Number Heroes*
  - *Carnival Countdown*
  - *Zoo Zillions*
  - *Calculating Crew*
- *MS Paint* (Microsoft)
- *HyperStudio* (Roger Wagner)

Computer Eliminates the Frustration of Writing

Steve recalls an example of how a computer benefited one of his students last year, a young man with Down Syndrome, who had a great deal of trouble with writing skills. His writing was so messy that it was difficult to proof read anything he wrote. When the student used the

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A PRODUCTIVE COLLABORATION: JESPY HOUSE AND THE CENTER FOR ENABLING TECHNOLOGY

by Orah Raia

Many individuals with disabilities lack marketable job skills and have not been adequately prepared for meaningful employment. Hence, the unemployment rate for people with disabilities is 66%, compared to a roughly 6% overall unemployment rate. The ability to use a computer in today's work place can play an important role for adults with disabilities in reducing these numbers and helping them to become valued members of the workplace.

From now until the year 2000 five of the fastest growing careers will be computer related (Thomas & Knezek, 1996). Of all the new technologies, online communication has the strongest potential to break down the barriers and inequities encountered by students of different socioeconomic, racial, linguistic and disability backgrounds (CAST, 1996). For people with disabilities, the value of technology cannot be overstated, providing assistance in organization, writing and communication - areas in which many people with disabilities encounter difficulty.

A Collaborative Effort in Vocational Training

This article profiles a special collaboration between the **Center for Enabling Technology (CET)**, a non-profit organization which helps people with disabilities gain access to computer technology, and **JESPY House**, an independent living center for adults with learning disabilities and neurological impairments which offers residential options, recreational programs, vocational training and job placement. This collaborative project was launched with grant funds from the Jewish Community Foundation of MetroWest (Essex and Morris counties).

JESPY House staff recognized the need for adults with disabilities to have computer skills, but they lacked the up-to-date equipment needed to provide such training. They also were concerned about their clients' needs for individualized instruction that proceeded at a slow pace and was tailored to their unique learning styles. Enter CET which has both the equipment and the expertise. JESPY House staff selected clients who they believed would enjoy and benefit from learning to use computers. CET performed evaluations to determine each individual's computer needs, and visited job sites to see which software programs employers have been using. CET then provided one-on-one training over a 10 week period to teach clients the computer skills they needed to acquire. In addition, CET has the ability to provide, if needed, special adaptations to access the computer, such as alternative keyboards, enlarged print, or software programs that read text aloud. Debbie Newton, CET's Assistive Technology Specialist, provided the training for these individuals. I interviewed two of the adults who are being provided with this specialized training. Each is unique, with individual goals, aspirations and needs.

Participant Profiles

Debra Ann Davidson is a young woman with excellent communication skills. She and I had a lengthy conversation and she told me all about her favorite country singer, Vince Gill. After I had asked her many questions, she then asked if it would be OK to ask me some questions. I replied, "Of course," and she proceeded to ask me questions about my children! Debra lives with a roommate in South Orange and is starting a new job in a large real estate office. Her job responsibilities will include filing, placing checks in numerical order and operating the postage machine. Debra says she likes working in an office, and remarked how as a little girl, her mom would give her papers to "file" at home and how much she enjoyed doing that.

After conducting a computer evaluation, Debbie Newton determined that Debra should focus on learning how to use word processing and enter information into a database. Debbie began by teaching Debra the basics of *Microsoft Works*, an easy-to-use, integrated package: how to open an application, start a file, save it, and access it again. She is quite adept at operating a mouse, and has practiced on both Windows and Macintosh computers. Debra is legally blind, but she has enough vision to operate a computer using 32 point font. Debbie taught Debra how to enlarge the font while she is entering information into the database, and then how to reduce it when she is finished. In addition, Debbie placed *ZoomCaps*, letter stickers which have large white letters on a black background (available from Don Johnston, Inc.), on the keyboard to make the letters stand out. Debra likes to "surf" the Internet in the public library, and especially likes to check out the Vince Gill site! Debra is looking forward to starting her new job, and with the computer skills she has learned at CET, she will have an opportunity to enhance her work skills and increase her chances of success in the workplace.

Michael Roemisch is an adult with considerable work experience in a number of areas. He has been employed at Shop-Rite for eight years, and previously, worked in several jobs in a clerical capacity, including Dun & Bradstreet in New York. Michael is able to commute to his job using public transportation, and his job coach is currently looking for a new job for him that is closer to home. Presently, Debbie Newton is working on word processing skills with Michael, teaching him how to compose a letter using appropriate letterhead, how to check for accuracy, and how to edit mistakes, using *Microsoft Works*. Initially, Michael had difficulty operating the mouse, however with practice and coaching, Debbie has noticed a marked improvement in his ability to control it. In his spare time, Michael likes to read. In the past, he has volunteered at a hospital, where he says, "All the nurses were crazy about me!" Michael likes to work with people and is very good in math; he would like to have a job that provides him with the opportunity to take advantage of his many skills.

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BLIND STUDENT

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copy for herself. The talking computer makes writing easier because she can check and correct her own work. Before, if she made a typo, a sighted person would have to read it and correct it. It has helped to increase her independence." "I use my laptop for homework sometimes. I also like writing stories on it, just for fun," Serena added.

New Tools for Meeting Junior High Demands

Next year, Serena will begin 7th grade in the Junior High and will need to have a completely portable writing device. To facilitate this transition, she and her mother obtained a list of all the resources and goals in the Junior High. In March, they took this list to the International Braille and Technology Center for the Blind in Baltimore, Maryland where they checked out extensive displays of technology and Braille-producing instruments. They were able to select adaptive equipment that will allow Serena to access all the software and equipment she will encounter at school. Serena and her mother decided on a *Braille Lite* (Blazie), a small, portable note-taker with 6-key

One of the skills that Serena needs is to know when to switch to different items to accomplish different tasks. For reports, she might Braille her first draft, check it, then write her second draft on the computer

Braille input and a 40-cell refreshable Braille display. This will enable Serena to take notes in class and print them later. They were also able to preview other technology which serves the needs of blind people. "There are several items that Serena doesn't use yet like scanners for reading books. These would allow her direct access to print. Eventually, I'm sure, she'll begin using those."

The Annual Convention of the National Federation for the Blind is another place where Carol and Serena find resources. This organization is comprised of blind individuals and parents of blind children who advocate for themselves. "It's fun because you get to see prototypes of things that are being developed. You really get a sense of what direction things are going. For example, most blind people have used DOS programs which are text-based, but now everybody else is going toward Windows, so it's a question of access. Which one should we teach our kids? If you go to a convention, you can see what blind people will need to learn in the future," Carol explained.

I asked Serena what she would like to do in the future and she enthusiastically responded, "I want to be a counselor for kids with disabilities. For example, there is a kid in my karate class (karate rules!) who needs help sitting still. I'd like to try to help him listen. I like analyzing kids. Oh, yeah, they're interesting to study. I like hiking and bodysurfing in the ocean. I also like crabbing and fishing. I'd like to keep doing those things too."

Her mother added, "She's planning to go to college. New York University is her choice at this point. She's a good student. She makes us proud. She's very studious and gets all A's on her report card."

The Role of Technology

Carol concluded, "Technology does not replace literacy. A child needs a real way of reading and writing. Just because a child can be read to, doesn't mean that they are literate. There's no other way to learn grammar, spelling and all the other things we learn by reading. It all needs to be in place first. Beyond that, technology can enhance a child's education. I think technology serves the same function as it does for everyone else. It's motivating and fun and it serves as a support. It's a tool of society. I've seen situations where teachers or evaluators or child study team members question whether the blind child can even use technology. I'd say, keep the doors open, it's an absolute necessity. Everyone else is using technology, and blind children need every opportunity to be included." ΔΔ

Theresa Lupo is a graduate student in the Department of Special Education at The College of New Jersey.

MIDDLE SCHOOL

(continued from page 6)

computer to complete his writing, Steve noticed that his writing ability improved by leaps and bounds. He was more willing to work, and his grammar and spelling skills improved. "Basically," Steve said, "you removed part of the disability by eliminating the frustration he experienced with penmanship." Steve highlights an important element in this example, and that is the importance of functionality. As Steve pointed out, "we could spend 10 years trying to get this young man to write perfect 'f's, but it is more important to facilitate his language and grammar skills."

Communication by E-mail

Steve also uses e-mail in his class. His students use e-mail to communicate with one another as well as to pen pals with whom they are developing relationships. Steve has encouraged those students who have computers at home to sign up for an e-mail account. He has even used e-mail to communicate with a student who has left his classroom. (Imagine how this could facilitate communication between educators and parents!)

Computers as a Teacher Aid

Computers not only provide a wide range of benefits as instructional tools, they also help educators in areas of assessment and recordkeeping. Steve commented on the ability of many programs, such as Edmark's *Mighty Math Series*, to track each student's progress. He prints out a spreadsheet with each skill assessed and keeps track of students' progress by indicating whether they have mastered a particular skill area (M) or are continuing to work on it (C). Technology makes the job of recordkeeping more efficient, hence leaving more time for him to devote to instruction.

Barriers To Overcome

When asked what he thought the biggest obstacle was to students having more use of computers in the classroom, Steve stated the lack of computers created difficulties, but one could get around that. As someone who understands the benefits computers can provide, he integrates technology into all areas of his curriculum.

However, he does not see other teachers doing this, and he believes this creates the biggest barrier for kids. His school does not have any regular training programs or workshops for teachers on technology, although as he pointed out "If a teacher is interested in computers, there is no shortage of resources for help here."

Sample Goals and Objectives for Integrating Technology into the Curriculum

- Student will use *Storybook Weaver Deluxe* (MECC) to write an original creative writing piece, integrating graphics and text.
- Students will use *HyperStudio* to develop an interactive project integrating sound, graphics, text and original artwork. Students will develop a stack with a number of different cards and will add buttons to connect cards and stacks.
- Students will utilize multimedia software packages to:
  a) research topics of interest
  b) explore curriculum related information in a multimedia environment
  c) enhance basic skills relating to the curriculum
- Students will utilize America Online and the Internet to:
  a) research topics of interest and attain information
  b) students will develop international pen pals in order to find out about other cultures.
  c) publish their school projects
- Students will use *Print Shop* (with assistance) to design and print greeting cards, banners, signs and stationery. This is part of the project, The Kids Computer Company, for which the students integrate various skills to run a small business.

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Orah Raia is a graduate student in the Department of Special Education at The College of New Jersey.

CET AND JESPY HOUSE

(continued from page 7)

Helping Individuals Gain Independence

Assuming total responsibility for locating and coordinating needed services is a challenging task for many adults with disabilities and their families. Employers sometimes lack the knowledge of how to accommodate an individual's needs, while they also need accurate and honest information about them. Programs such JESPY House and CET empower individuals with disabilities in making significant life choices and changes to enhance their employment and independent living opportunities. These programs assist individuals in identifying their goals and barriers, and help them develop their own skills as self-advocates. Both Debra and Michael have the ability and skills needed to learn how to be advocates for themselves, and in turn, this personal empowerment will have a "ripple effect." Gaining the ability to write a letter on a computer, as Michael is learning, provides him with a tool to advocate. By overcoming some of their own barriers and learning to speak up for themselves, they will become aware of issues in the community, will feel confident advocating for themselves, and may even begin to advocate for others. The skills they have learned at CET will surely help them along the way to increased independence and self-confidence.

References

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Thomas, L.G., & Knezek, D.G. (1996). Technology literacy for the nation and its citizens. Report prepared for the International Society for Technology in Education. (ISTE). Eugene, OR.

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Orah Raia is a graduate student in the Department of Special Education at The College of New Jersey.

SELECTING SOFTWARE

(continued from page 1)

present information? Students with visual impairments or visual perceptual problems need visual displays that are not overly cluttered. Children with physical disabilities or motor coordination problems need programs in which speed is not essential. Similarly, children with reading difficulties or performance anxiety need software in which all the reading and decision-making is self-paced. Features that allow users to turn off music and sound are essential for students who are easily overstimulated or distractible. Nonreaders benefit from programs in which the instructions and questions are provided through speech output.

4) Educational software should be **easy to use**. Written documentation should be clear and easy to follow, and it should not take an inordinate amount of time for either adults or children to learn to use the program. There are so many programs available today that it is simply not necessary to choose a program that is cumbersome to learn or tricky to use.

5) **Try it** before you buy it. Never buy a piece of software because it "looks good" in an advertisement or product flyer. Go to conferences and see software demonstrated. Find your local NoodleKidoodle or Zany Brainy (children's toy stores) and watch children interacting with the software on the stores' computer stations. Or visit the web sites of software publishers, many of whom offer free downloads of software demos. To find the web site address of most educational software publishers, go to http://www.microweb.com/pepsite/Software/Publishers/O.html

And, of course, read reviews of software written by educators and parents in publications such as **TECH-NJ**.

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*Amy Dell and Anne Disdier are editors of **TECH-NJ**.*

LIFE SKILLS MATH SOFTWARE

LEARNING TO TELL TIME

by Erin DeHaven

SUBJECT AREA: Telling Time and Awareness of Time

PUBLISHER: IntelliTools
(800)899-6687

COST: $49.95; Multi-user price: $35 for 25+ users

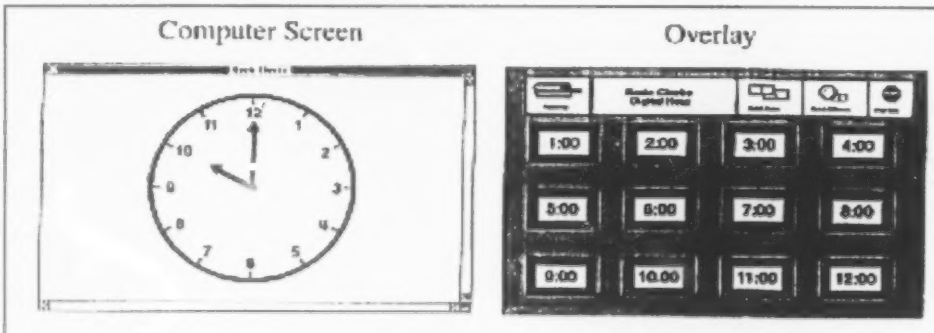
INTENDED AUDIENCE: Students in Grade 1 or higher

NOTABLE SYSTEM REQUIREMENTS:
Macintosh: System 6.07 or higher; 2 MB RAM; *IntelliKeys*

MATERIALS: *Learning to Tell Time* comes with 10 custom overlays for *IntelliKeys* and follow-up activity sheets that can be printed out to reinforce newly learned concepts.

EDUCATIONAL GOALS: *ExploringTime*: To learn the concepts of a.m. and p.m.; to relate a.m./p.m. to individual hours, including the terms midnight and noon; to estimate the time of day that everyday events might occur.

Learning to Read Clocks: To match the time to the hour on both digital and analog clocks; to match the time to the half hour on both digital and analog clocks; and to understand the difference between the minute hand and the hour hand.



"Match Different" will bring up a quiz that asks the student to match the clock on the screen with a different type of clock on the overlay.

DESCRIPTION: These two programs provide drill and practice on functional time telling. *Exploring Time* reinforces the skills necessary to estimate the time of day and associate activities that occur either in the a.m. or p.m. For example, using speech output, the program asks, "About what time do you eat breakfast?" Students then select a clock face on the *IntelliKeys* overlay. Students are also given scenarios about events that occur either in the morning or in the evening and are asked, "Is the time a.m. or p.m.?" If they answer incorrectly, they are told, "Oops, try again" and are given clues to help them find the correct answer.

Telling Time offers the option of learning on analog and/or digital clocks. Its purpose is to not only introduce the clock reading skill, but to give students an understanding that although two clocks may look completely different, they both tell the same time. There are a number of different types of "quizzes" that students can work on, including telling time on the hour and half hour on both digital and analog faced clocks.

STRENGTHS: These programs address a very real need for students with learning difficulties and/or mental retardation. They provide much needed practice in time telling without requiring any reading or writing. The screen displays and overlays are uncluttered, and the untimed nature of questions makes the programs appropriate for students who need extra time to think. Both programs are easy to use and provide follow up off-computer activities to reinforce newly learned concepts. Teachers can individualize the quizzes by making up their own activities and scenarios. Providing clues following wrong answers is a helpful feature.

WEAKNESSES: The overlays in *Telling Time* may seem overcrowded to some students. A child who is not familiar with the sequential order of time may have a hard time finding the clock face that he or she is looking for.

SUMMARY: *Learning to Tell Time* is a valuable software package for students who need help in this life skill area. The use of custom overlays for *IntelliKeys* makes the program accessible to nonreaders and people who have difficulty writing or completing worksheets. The *Exploring Time* component is an interesting approach to teaching simple time concepts to students who are not yet able to learn to read clocks. These programs provide excellent *IntelliKeys*-based programs for teachers and parents who do not have the time to create their own custom programs and overlays with *IntelliPics*.

Erin DeHaven is a graduate student in the Department of Special Education at The College of New Jersey.

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MONEY COACH

by Judith Hendricks

SUBJECT AREA: Personal Money Management

PUBLISHER: Meeting the Challenge, Inc.
(800)864-4264

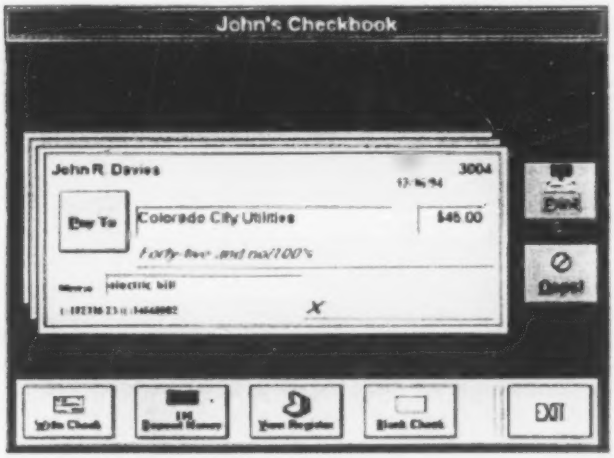
INTENDED AUDIENCE: Ages 9 - Adult

COST: School Edition: $79.95 (also available as lab pack, agency edition & home edition)

NOTABLE SYSTEM REQUIREMENTS: IBM: 486 or higher, Microsoft Windows 3.1 or higher, hard disk drive with 18 MB free space, 8 MB RAM recommended, audio card recommended

EDUCATIONAL GOALS: To enhance the understanding and skill level of money management concepts for individuals with cognitive disabilities.

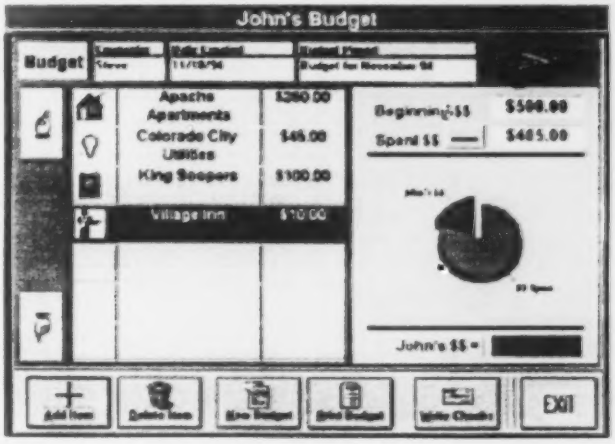
DESCRIPTION: *Money Coach* is a multimedia software program which provides training in basic money management through two main modules: *Budgeting* and *Checkbook*. The software is designed to teach the reality of budget priorities and limitations and bill paying. By accessing the Budget Application, a student can create and organize their own personal budget. Specific features in the Budget Mode include the option to add items, delete items, create a new budget, write checks and print the budget and/or the checks. The Checkbook Module allows the student to deposit money, view their checkbook register, write and print checks. *Money Coach* coordinates ones personal budget with their checkbook account and automatically balances the checkbook.



MoneyCoach writes checks or practice checks, updates your register, and automatically balances your checkbook.

Money Coach utilizes a Picture Password feature for the purpose of restricting access to personal account information. Users can determine their own access code and corresponding picture icon through a master password function. A large on-screen number pad is also included for entering amounts.

STRENGTHS: *Money Coach* addresses a serious need for many older students in special education. It is easy to use, and the clearly organized visual display allows the user to focus directly on the task at hand. Budget concepts are presented by way of spoken text, written text, and visual representations to enhance the user's performance. The automatic balancing feature allows a student with limited math skills to become proficient at personal money management. The program also has a unique feature which prevents overdrafts from being written. No writing is needed except for the signing of checks. A *TouchWindow* can be used for users who get confused by a standard keyboard.



Budget concepts are represented via live audio, text and pictures.

WEAKNESSES: The picture password feature is case sensitive; therefore, passwords must be typed exactly as they were created which may be difficult for some students. It also might be helpful to include an on-screen calculator feature to provide more advanced students with the option of balancing their own checkbook.

SUMMARY: *Money Coach* is an innovative way to increase the understanding of personal money management for individuals with varying degrees of cognitive impairment. It can be used for simple "shopping list" budgets or for more complex budgets with multiple payees. The graphics and check printing features enable non-readers to participate in bill paying. *Money Coach*'s ease of use and affordability make it a great program to integrate into classes which focus on life skills.

Judith Hendricks is a graduate student in the Department of Special Education Department at The College of New Jersey.

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ACADEMIC MATH SOFTWARE

MEGA MATH BLASTER

by Danielle Niemann

SUBJECT AREA: Math: Critical Thinking, Computation, Word Problems, Problem Solving, Real World Math

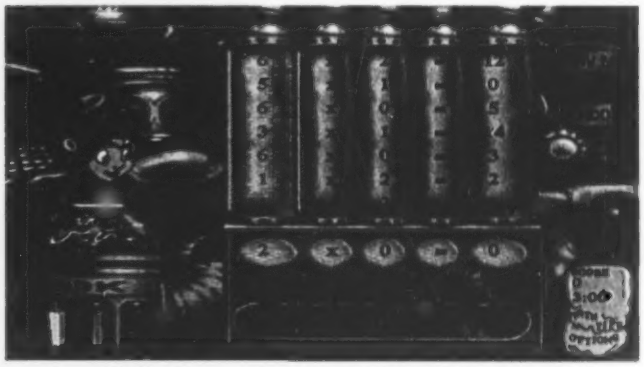
PUBLISHER: Davidson
(800)545-7677

COST: $89.95 Teacher Edition

INTENDED AUDIENCE: Grades 1-6

NOTABLE SYSTEM REQUIREMENTS:
Windows 95 only - 486/66MHz or faster with 8 MB RAM, 2x CD-ROM drive
Power Macintosh only - 8MB RAM, 2x CD-ROM drive, system 7.1 or higher

DESCRIPTION: Are you prepared to melt the goo on the planet Moldar? *Mega Math Blaster* will challenge you to do just that! *Mega Math Blaster* is educational math software designed to develop a student's skills and confidence in math. The software contains five different games involving addition, subtraction, multiplication, division, number patterns, estimation, fractions, decimals and percents. Users can choose from six difficulty levels in these nine different subject areas. In this respect, the software is designed to grow along with the user's skill development in math. The software is motivating and challenges users to assist Blasternaut "melt the goo on planet Moldar" while "battling the villain Gelator" by "powering up three special energy crystals."



A multiplication screen from the Equationator activity

The five exciting games include the following:

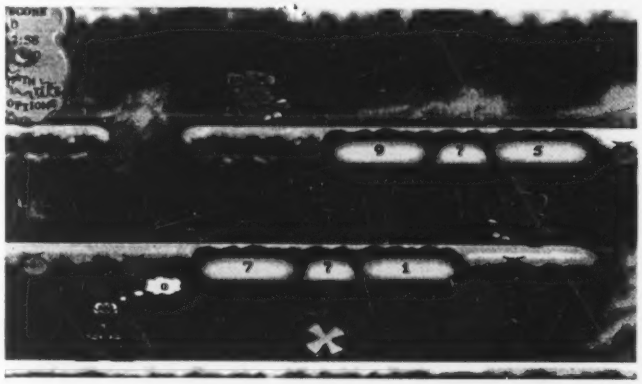
1) Space Zapper - Find the missing value in each math equation that appears on the instrument panel and earn bonus energy.

2) Equationator - Determine which numbers and operations can be used together on the generator tubes to make correct equations on the equationator.

3) Cave Runner - Move up through the cave by fitting specific numbers between two other numbers.

4) Math Blaster - Shoot the guard pod on Gelator's spaceship with the correct answer to a math problem.

5) Space Zapper 2 - Solve the math equations on the control panel by zapping space objects that carry the correct answers.



A student must help Blasternaut find a number that fits between those listed to advance in the Cave Runner activity.

STRENGTHS: The "training" option gives students the opportunity to practice their skills in a given subject area without the distraction and pressure of game play and then provides a visual progress report. The software tracks mastery throughout at a selected level between 85% and 100%.

The options menu offers choices in problem format. For example, vertical, horizontal and/or mixed problems can be selected. This is especially beneficial to students having difficulty with a particular problem format. The program also allows teachers and students to enter their own problems.

The software provides math tips within each activity. Screen tools are available within each activity to offers hints: a number line for addition and subtraction, and a math grid for multiplication and division.

WEAKNESSES: A minor disadvantage of the program is that only one mission can be saved at any given time under one user name. Also, the minimum mastery level of 85% may be difficult for some students to achieve.

SUMMARY: *Mega Math Blaster* is exciting software that grows with the student through increased levels and skills. The missions with Blasternaut are motivating and fast paced. The software comes with supplemental materials, including a 64 page activity adventure book for fun and learning away from the computer.

Danielle Niemann is an alumna of the Department of Special Education at The College of New Jersey.

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SNOOTZ MATH TREK

by Marta Isaacson

SUBJECT AREA: Math: Deductive Reasoning, Mapping Skills, Using Coordinates on a Grid, Sequencing, Solving Multiple Step Problems, Recognizing Geometric Shapes, Spatial Awareness, Understanding Whole/Part Relationships, and Encoding and Decoding.

PUBLISHER: Theatrix Interactive, Inc.
(800)955-TRIX

COST: $34.95 Teacher's Edition

INTENDED AUDIENCE: Grades 1-5

NOTABLE SYSTEM REQUIREMENTS:
Windows: 486/25Mhz or better, 8 MB RAM, 2x CD-ROM
Macintosh: LCIII or better, System 7, 8 MB RAM, 2x CD-ROM

DESCRIPTION: The plot of this offbeat adventure revolves around the crash landing in the town of Seaviewz of two cartoon characters from the planet "Snoot." "Flarn" and "Foozle" are on a Great Trek to collect items on the Big List. "Al's Dog," who witnessed the landing, serves as a guide as students help the Snoots find the items by completing the following activities:

1) Hide and Seek - Flarn or Foozle hides somewhere in town, and students must find it. Students learn about graphical representation and compass directions as they click on squares of a grid that represents Seaviewz. Al's Dog gives "hot" or "cold" hints as students eliminate areas. Guesses are listed in the "Guess Box" to help students track their path.

2) Street Music - Two modes of play are offered. Students can click on a sequence of objects and play back the symphony they have created, or they can match a sequence created by Flarn as they test their auditory and visual memory.

3) Frumptz Elevator - The elevator takes students to different departments in Frumptz' Store as they attempt to match articles of clothing, colors, and patterns. Students can help Foozle put together a dream outfit, or they can create one of their own. In matching Foozle's choices, students choose from three difficulty levels.

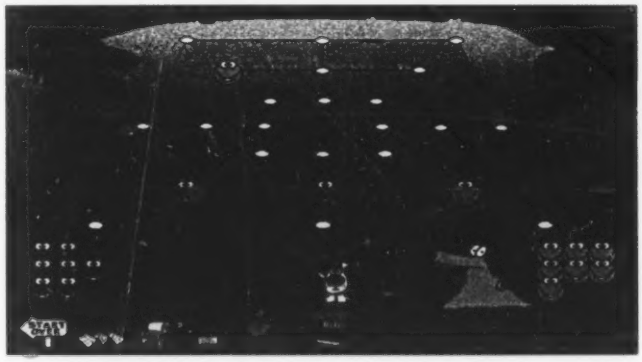
4) Bump the Bumptz - In this variation on Nine Men's Morris, the goal is to capture seven of the other player's Bumptz from the board or to trap the other player's Bumptz so they can't move. A student may play against another student or Flarn (easy level) or Foozle (harder level). Players take turns placing Bumptz on spaces on a grid. Three in a row allows the player to "bump" one of the other player's Bumptz. When all Bumptz are placed on the grid, players continue to move theirs along the line until the game is completed.

5) Al's Garage - Students help Flarn and Foozle buy the parts Al the mechanic needs to repair their spaceship. Students identify the part on the Pieces & Parts machine and then buy it by completing a pattern. There are three levels of difficulty, and students practice spatial relationships/transformations and recognizing geometric shapes as they select and rotate the shapes to duplicate the puzzle.

6) The Translator - Snootz do not speak English, and their garbled speech is represented by symbols. The Translator decodes their messages into English, and it allows students to have their messages encoded into Snootian.

7) The Library - Here students can find books which provide detailed instructions for each activity. They can also read up on Snootology and learn the tale of the Snootz and their Great Trek.

The Big List items can appear at any time on any screen, so students will need to complete all the activities to compile them all. Games can be saved. As they progress through the game, students are rewarded with photos of their adventures. Clicking on the Snap Shotz booth allows them to view their photo album. Students can type captions beneath each picture.



Flarn and the user engage in a game of Bump the Bumptz.

STRENGTHS: The wacky characters and their crazy escapades create a highly engaging atmosphere for learning math concepts. Students are motivated to keep working in order to find all the Big List items. The activities clearly match the stated objectives, and the Teacher's Guide provides interesting off-computer activities which extend learning. One of these activities teaches students to encode a Braille message.

WEAKNESSES: When Flarn and Foozle speak in Snootian, having to translate their message via The Translator may be a hindrance to poor readers or a distraction to some students. Immediate onscreen help within the activities would be better than having to use The Library for directions.

SUMMARY: Students love games, and helping Flarn and Foozle find their Big List items will keep students plugging away at the activities. *Snootz Math Trek* helps students understand the underlying concepts of math and provides an excellent complement to a complete math curriculum.

Marta Isaacson is a graduate student in the Department of Special Education at The College of New Jersey.

MAJOR LEAGUE MATH

by Susan Young

SUBJECT AREA: Math: Addition, Subtraction, Multiplication, Division of Integers and Decimals, Word Problems, Averaging, Equalities and Inequalities, Measurement, Money, Time, Percent, Basic Geometry, Ratios, Prime Numbers, Estimation, Fractions, Powers and Square Root, Positive/Negative Numbers.

PUBLISHER: Sanctuary Woods
(800) 943-3664

COST: $69.99 Teacher's Edition

INTENDED AUDIENCE: Grades 4-7

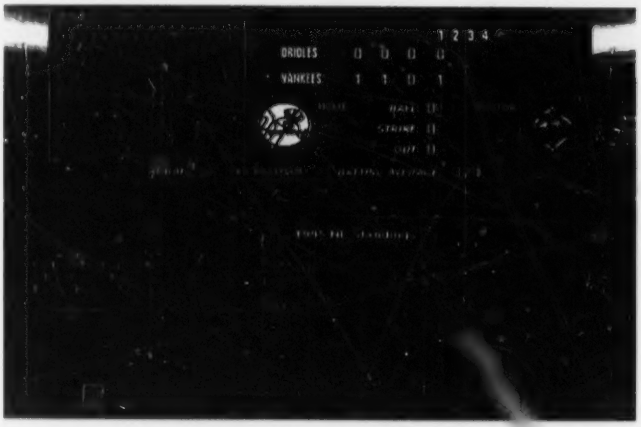
NOTABLE SYSTEM REQUIREMENTS:
Macintosh: System 7.0 or higher, 8MB RAM, CD-ROM Drive
Windows: 486SX or better, 8MB of RAM, Windows 3.1 or Win 95, CD-ROM Drive, Sound Blaster-compatible Sound Card

DESCRIPTION: *Major League Math* is an animated baseball game which provides practice in math skills and solving math problems within the context of baseball. The idea behind the program is that many students do not make the connection between the math they learn in school and real life and that educators need to help them make that connection. By taking a subject many students are interested in - baseball - which, by its nature, is full of math, this program provides numerous opportunities to use math as a vehicle to solve problems. With digitized sound effects such as cheering crowds, a baseball announcer, and traditional organ music in the background, the program simulates being at a real baseball game.

The success of the game depends on how well math questions are answered. Students choose their own team and the opposing team. They then control the game by making such choices as the type of pitch to throw and the type of swing to use while at bat. The accuracy of their answers to the math questions reflects the results of the pitch or swing. For example, a correct answer may result in the student's team's pitcher throwing a strike.

Assistance is provided if needed in what is called the Coach's Corner which offers 25 "chalk talks" or tutorials on different mathematical concepts. There is also a Team Library and a Trivia Library which provide information about the game of baseball and baseball teams, some of which are needed to answer questions within the game.

STRENGTHS: For baseball enthusiasts, this program offers a highly motivating approach to practicing and applying math concepts. It shows students that the often dreaded math class can be fun and can relate to their own lives and interests. The options to choose from four levels of difficulty and to turn off the music and sound effects are important features.



A sample math problem in *Major League Math*

WEAKNESSES: Many of *Major League Math's* strengths could also be considered its weaknesses, depending on students' interests and learning needs. The game part of the program involves multiple steps which require students to choose teams, types of pitches and swings, etc. and may be difficult for students whose baseball knowledge is less sophisticated.

The inability to select specific skill areas within a difficulty level may result in students' being presented with problems with which they are unfamiliar. A helpful feature would be to allow teachers to specify the types of problems to be presented.

SUMMARY: *Major League Math*, an animated baseball game, offers students the opportunity to strengthen and practice math skills within the context of baseball. Students who love baseball will be motivated to solve the math problems and will come to recognize the relevance of math to their lives. This program will definitely be a favorite with baseball fans.

Other Sports-Related Programs from Sanctuary Woods

Math Ace Grand Prix Edition: Grades 3-12. Students build a race track as they solve math problems, all leading up to the option of driving the Grand Prix circuit.

NFL Math: Grades 3-6. Students practice math skills within the context of a football game.

NFL Reading: Grades 3-6. Students practice grammar, vocabulary, comprehension, descriptive writing, dictionary skills, and more in the context of football.

Word City Grand Prix: In an auto racing format, students build spelling, vocabulary, reading comprehension, alphabetizing, rhyming, and audio discrimination skills.

Susan Young is a graduate student in the Department of Special Education at The College of New Jersey.

MEASUREMENT IN MOTION

by David Geronemo

SUBJECT AREA: Math: Problem Solving and Reasoning, Analysis of Measurements of Dynamic Systems (those which change over time), Graphing Linear and Non-linear Relationships, and Formulating Hypotheses About the Relationships Between Distance, Time and Speed of a Changing Phenomena.

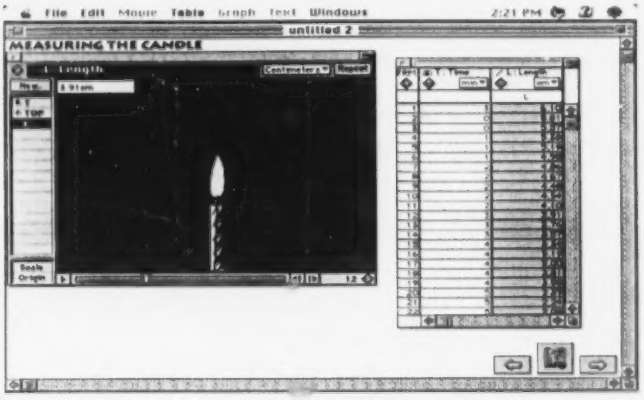
PUBLISHER: Learning In Motion
(800)560-5670

GRADE LEVEL: High School

NOTABLE HARDWARE REQUIREMENTS:
Mac only: System 7.0 or greater, Minimum 2 MB RAM, 4X CD-ROM Drive

DESCRIPTION: This program contains five investigative folders which vary in their mathematical and scientific level. A problem is stated for each of the five activities and directions are given for solving the problem. The activities vary along the continuum from being highly directive to somewhat open-ended.

The first activity, the Candle, is designed to teach students how to use the program and includes step by step directions for solving the problem. The investigation is based on a time lapse movie of a burning birthday candle. Students begin by predicting what a graph of the candle's graph would look like over time. They then graph measurements from the movie, compare their results with their original prediction, and extend their learning to hypothetical situations, such as a candle that burns more quickly at first, then slows down and vice versa.



Students can click on a point on the table and see the candle burning at that point in time.

Each succeeding investigation becomes more complex. For example, the third investigation is based on a movie of an amusement park ride called the Typhoon which carries its passengers in a large circle and is partially counterbalanced at one end. Students are asked to predict where riders spend most of their time, near the top or near the bottom, and at what point the car travels the fastest. Using different kinds of graphs (histogram, line graph, bar graph, scattergram, etc.) students observe the car's motion and test their hypotheses.

The last investigation is the most complex. It is based on a movie of a truck rolling down the highway. Students are first asked to predict where they think the vanishing point will be (the place where the truck, the road and the rest of the cars converge to a single point on a line). To test their prediction students are able to plot x and y coordinates on the video and make a graph of those points versus the width of the truck. Students find the exact vanishing point by determining the coordinates at which the truck's width is zero.

STRENGTHS: *Measurement in Motion* cleverly uses the computer's capabilities to teach the complex process of making hypotheses and taking and analyzing data. It is easy to use and is designed so that the introductory activities teach students how to proceed. An exciting feature is that, with the addition of a video camera and video capture board, students can shoot their own movies and use them with the program. They can take and analyze different measurements from the home video using the wide variety of graphs and tables provided in the program. Teachers, too, can make use of this feature and develop authentic activities for students to work on independently or in groups.

SUMMARY: *Measurement in Motion* provides an innovative way of teaching students to take measurements, develop graphs, and analyze their data. The ability to create new videos to add to the program extends its scope and increases its relevance for students.

Graph Action Plus

This program provides a similar representation of change in position over time for students as young as sixth grade. By exploring QuickTime movies, students learn to identify and explore common types of graphs and recognize and describe real life motions that create these graphs.

In the Graph Action activity students can move an object (car, person, ball, etc.) back and forth along the screen in a linear path. As the object moves, a graph appears, tracing the object's position over time. Because the graph is produced simultaneously with the motion of the mouse, students can link the concrete motion with the abstract "language" of the graph.

The Action Analyzer activity lets students expand their graphing skills by exploring "real world" phenomena that have been captured on video. They can isolate an object in the video, track its horizontal or vertical position over time, and watch as a graph appears.

The Multi-Viewer portion of the program allows students to see up to four movies or graphs side by side, so they can compare the data and graphs.

Publisher: Tom Snyder Productions
Price: $99.95 Teacher's Edition

David Geronemo is a graduate student in the Department of Special Education at The College of New Jersey

MATH CURRICULUM PACKAGES

Editor's Note: A viable solution for school districts and teachers who want math software that matches their math curriculum and is easy to use is to purchase one of the comprehensive packages that were released this year. Both the *Mighty Math Series* (Edmark) and *MathKeys* (MECC) address the "How & Why" of math through activities in academic skills and thinking skills and also provide practice in computation skills. All of the titles in the series follow the same format so that once students become familiar with the format in the early grades, they will be comfortable using the later programs.

MIGHTY MATH ZOO ZILLIONS

by Gerald Quinn

SUBJECT AREA: Math: Problem Solving, Number Lines, Counting Money and Making Change, Addition and Subtraction, Word Problems (+,-, x, ÷), Counting Forward and Backward by 2's, 5's, and 10's, Spatial Awareness

PUBLISHER: Edmark
(800)691-2985

COST: $59.95 School Version

INTENDED AUDIENCE: Grades K-2

NOTABLE HARDWARE REQUIREMENTS:
IBM: Windows 3.1 or Windows 95, 486/Pentium/33MHz or better, 8 MB RAM, 2x CD-ROM drive. Mac: System 7.0.1 or higher, 8MB RAM recommended, 2x CD-ROM drive

SPECIAL FEATURES: *TouchWindow* compatible; three activities have built-in scanning for single-switch users.

DESCRIPTION: Students visit a friendly, animated zoo that's full of math fun and discovery. The Otter Twins, Ryan the Lion, and other playful animals guide students on a numerical adventure of five activities:

1. Number Line Express - Students play train engineer and help their animal friends reach stops throughout the zoo by correctly locating numbers on the number line. Add numbers to move forward, subtract to go back, etc.

2. Jungle Trail - Students practice basic math skills. As they solve problems such as addition, subtraction, and rounding, students get to spin the spinner to move along the trail where they encounter surprises.

3. Fish Stories - Students move fish in and out of tanks to practice addition, subtraction, early multiplication, and division. As students manipulate fish or numerals, the results are reflected on the screen in pictures, spoken words, written words, numbers, and mathematical equations simultaneously. Fish Stories challenges students to create pictures to match the words and to create mathematical equations to match the pictures.

4. Gnu Ewe Boutique - Students learn about money by helping Allison, the shop owner, assist zoo animals create new wardrobes. As students progress they help animals make purchases and determine the correct change. This activity gives students the opportunity to work with money in a meaningful way. They learn such important concepts as "larger coins are not necessarily worth more" and that the same amount of money can be shown with different combinations of coins.

5. 3D Gallery - Students sharpen spatial skills and build math vocabulary as they learn to identify 3D geometric solids. An enhancement is the use of everyday objects such as balls, cans, and boxes. As students explore the shapes they begin to learn their properties such as the number of sides.

STRENGTHS: *Zoo Zillions* is a fun learning experience that combines captivating graphics, animated characters and sound. The educational strategies are sound, yet remain transparent to the learner. The activities have both Explore and Question and Answer Modes. Students can either experiment within an activity or answer questions posed by the Mighty Math characters.

Edmark's Grow Slides are a particularly nice feature. The skill level can be preset for a student within each activity, or as students successfully answer questions, the difficulty level automatically increases.

SUMMARY: *Zoo Zillions* is one of Edmark's six comprehensive math titles for grades K to 10. This program specifically addresses skills for grades K-2. In this and the other 5 titles, Edmark uses what they call Virtual Manipulatives that allow students to use the computer to make the connection between concrete and abstract mathematics. In *Zoo Zillions*, for example, as students solve an equation by placing fish in a tank, they see the equation on the screen and hear the written equation. Thus, students learn the basics and understand the concepts behind the facts through problem solving.

OTHER MIGHTY MATH SERIES PROGRAMS:
Carnival Countdown (K-2): one-two digit "+" and "-", 2D geometry, patterns, number symbols, early "x" and "÷."
Number Heroes (3-6): fractions, 2D geometry, probability, shape and number patterns, +,-,x,÷, and decimals.
Calculating Crew (3-6): "x" and "÷" of whole numbers and decimals, number lines, 2D and 3D shapes, money transactions.
Cosmic Geometry (7-10): shapes, solids, constructions, transformations, 2D and 3D coordinates, length, perimeter, area, volume.
Astro Algebra (7-9): variables, expressions, equations and inequalities, functions and graphing, ratios and proportions, fractions, decimals, and percents.

Gerald Quinn is a graduate student in the Department of Special Education at The College of New Jersey.

MATHKEYS: UNLOCKING MEASUREMENT K-2

by Deborah Newton

SUBJECT AREA: Math: Measuring Length, Area, and Perimeter

PUBLISHER: MECC
(800) 685-6322

COST: $99.00 School Edition; $180.00 Lab Pack (5)

INTENDED AUDIENCE: Grades K-2

NOTABLE SYSTEM REQUIREMENTS:
Macintosh: System 7 or later. Windows: minimum 486, Windows 3.1 or later, sound card recommended.

DESCRIPTION: *Unlocking Measurement* provides an opportunity for students to explore measurement concepts in a friendly, non-threatening environment. From the Main Menu students select the "Mat" on which they would like to work by clicking on the large, well-spaced buttons labeled Length, Area, or Area and Perimeter.

When the Length mat is selected, students can choose to *compare* length or *measure* length. The *Length Compare* mat permits students to add up to three colorful objects which they can then move around to compare their relative sizes and resize them. Clicking on the Reporter Tool button and then on one of the objects signals Marlu, the kangaroo, to tell how the length or height of that object compares to the other objects. Selecting the *Length Measure* mat allows students to measure items on the mat with a variety of non-standard units including paper clips, marbles, popcorn, and watermelons. (How many paper clips long is that worm?) A Notepad area is provided with all mats in the program so that students may also write about their work.

Selecting the Area mat presents a similar choice between comparing and measuring. Students place up to three of the same shapes on the mat. The *Area Measure* mat allows students to select non-standard units to measure objects - ladybugs, flowers, postage stamps, and more. If students opt for the Grid Mode, a background grid is displayed, and all the units that fit entirely within the shape are highlighted. In the Stamp Mode students can stamp units, one by one, onto the mat and into the shape.

The Area and Perimeter button brings students immediately to a mat displaying a 220 cell grid on which they can create shapes in any of four colors. A Paint Tool lets students "paint" shapes by clicking on as many contiguous cells as they wish; the program will not allow them to paint ineligible cells. This activity offers a Reporting Window which displays the numbers corresponding to the area and perimeter of the painted shapes. This display is dynamic and changes rapidly to reflect students' paintings so they receive immediate feedback about their shapes. When the Reporting Window is closed students can figure out the area and/or perimeter, record their results in the Notepad area, and then open the Reporting Window to check their work.

Three games are also included for measurement-related breaktaking: Lights On, Tight Fit and Eleven High.

STRENGTHS: Speech feedback enables early learners and non-readers to explore and learn independently. Users can elect to have Marlu speak either English or Spanish and onscreen text is displayed in the language of choice. Providing a conveniently displayed Notepad area encourages students to write about their discoveries, and when they print a mat, the Notepad text is printed as well.

WEAKNESSES: In the Area Measure mat, when Grid Mode is selected, only those non-standard units that lie completely in the shape are highlighted. Most of the shapes will contain numerous partial units that are not highlighted and this may cause some confusion. Students may need help recognizing that the entire enclosed space is the area of the shape, not just the highlighted portion.

SUMMARY: This program offers the opportunity to explore measuring length and area with non-standard units in an appealing and engaging fashion. With the click of a mouse button students can manipulate onscreen items to compare and measure length and area, and can paint shapes to learn about area and perimeter. Learning is facilitated and reinforced by the speech feedback available with the Reporter Tool. The readily available Notepad encourages students to think and write about their work. *Unlocking Measurement* is an excellent alternative to manipulatives for children who have physical disabilities.

OTHER MATHKEY SERIES PROGRAMS:
Unlocking Measurement 3-6: linear and angle measurements, relationships among area, perimeter, segment lengths, and angles.
Unlocking Whole Numbers K-2: base-ten clocks, counters, coin recognition, hundred chart, sorting, fact families, addition, subtraction, place value, number patterns.
Unlocking Whole Numbers 3-5: introduces multiplication and division to the concepts in Unlocking Whole Numbers (K-2).
Unlocking Probability K-2: flipping coins, rolling cubes, spinning tops, and drawing marbles, graphs, and charts.
Unlocking Probability 3-6: prediction and interpretation of probability experiments.
Unlocking Geometry K-2: create patterns and pictures, develop spatial sense, learn about geometric relationships.
Unlocking Geometry 3-6: shape and pattern construction, relationships among geometric shapes, symmetry.
Unlocking Fractions & Decimals 3-6: fractions, ratios, decimals, proportions.

Deborah Newton is a graduate student in the Department of Special Education at The College of New Jersey.

EDITOR'S PICKS - MATH

Access to Math (Don Johnston) and **MathPad** (IntelliTools)

Two recently introduced programs - *Access to Math* and *MathPad* - have been eagerly anticipated by countless individuals with physical disablilities and their teachers and parents. Both programs are extremely exciting because of their potential to make math accessible to students with physical and/or learning disabilities.

The programs are basically number processors, designed to let students write and work out math problems on a computer just as they would do with conventional pencil and paper. Students can even regroup (i.e., what used to be known as borrowing and carrying), and their numerals will automatically line up correctly. Both programs allow students to print out their work and can be used to generate worksheets so that all students in a class can be working on the same problems - on or off the computer.

Additional features include speech feedback so that math problems can be read aloud, and an option for auto-navigtion to guide students through the problems. Both programs offer easy switch accessibility. Although these programs are similar, each has features that make it unique, so be sure to check out both.

Access to Math
Don Johnston, Inc.
(800)999-4660
Macintosh only: LCII or higher, System 7, 8 MB RAM
$79 Single user;
$277 Lab Pack (5 user)

MathPad
IntelliTools
(800)899-6687
Macintosh only: System 7, 4 MB RAM, 14" monitor or larger
(800)899-6687
$79.95 Single Copy;
$299 Lab Pack (5 user)

Bit-Bot's Math Voyage

Students ages 5-8 learn math in an undersea world., Nine games, with three difficulty levels each, make it fun to practice concepts such as addition, subtraction, multiplication, time-telling, counting money, measurement, shape & pattern recognition, equalities, and inequalities. Students earn money for their efforts which they can use to purchase fish and treasures for their 3D onscreen aquarium. (Sanctuary Woods, Win/Mac CD-ROM, $39.99 consumer edition, $69.99 teacher edition)

Franklin Learns Math

Franklin the turtle, known to many through the popular book series, guides students through six learning activities in this program designed for children ages 4-7. Skills addressed include: counting, one-to-one-correspondence, number recognition, matching, addition, subtraction, arrays, number sequences, shapes & colors, patterns, time of day, reading a clock, and money. Each activity has three difficulty levels from which to choose.

A "Report Card" feature allows teachers and parents to view students' progress, and the teacher's edition features a wealth of lesson suggestions and related off-computer activities. (Sanctuary Woods, Win/Mac CD-ROM, $29.99 consumer edition, $69.99 teacher edition)

Stickybear's Math Splash

This CD-ROM consists of four entertaining games which motivate students in grades K-5 to solve math problems in addition, subtraction, multiplication and division: Overboard, Rapid Fire, Island Hopper and Submarine Shoot. Easy-to-use options allow teachers to select difficulty levels, customize the number of allowed attempts to answer a problem correctly, and turn automatic level advancement on or off. Correct answers are reinforced with amusing sound effects and graphics; wrong answers are corrected. The program tracks student progress and provides "report cards" to facilitate record keeping. (Optimum Resource, Win/Win95/Mac CD-ROM, $59.95 consumer edition, $79.95 2-pack school version)

NumberMaze Challenge

This new CD-ROM version of *NumberMaze*, a classic in educational software. To progress through entertaining mazes, students in grades K-6 must answer numerical and word problems that involve counting, addition, subtraction, multiplication and division of whole numbers.

The program offers teachers and parents tremendous flexibility and customizing options. 50 problem levels in each of eight different curricula are available, and problem specifications for each student in the class can be easily defined. Names can even be entered to personalize word problems. The automatic recordkeeping feature is especially valuable for teachers. (Great Wave Software, Win/Mac CD-ROM, $49.95 consumer edition, $59.95 school edition.

Unifix Software

Over the years Unifix Cubes have been manipulated by thousands of little hands, in thousands of classrooms. These cubes provide hands-on experiences that develop an understanding of math concepts. With this software program, students with physical disabilities can now experience the power of learning with manipulatives by using a mouse or a built-in scanning option. (Didax Media, available for Mac and Win, $79.95 Single user)

I recommend the following program/product for consideration for inclusion in a future issue of TECH-NJ: **Part A**

Name of Program/Product: _____
Brief Description: _____
_____
_____
Contact Person: _____
School/Company: _____
Street: _____
City: _____ **State:** _____ **Zip:** _____
Phone Number: _____
E-Mail Address: _____
My Name/Phone Number/E-mail Address: _____

PLACE STAMP HERE

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(FOLD HERE) **Part C**

If you know anyone who would be interested in receiving a copy of TECH-NJ, please fill in below.

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Street: _____
City: _____ **State:** _____ **Zip Code:** _____

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Street: _____
City: _____ **State:** _____ **Zip Code:** _____

NOW AVAILABLE

The Bridge to Braille:
Reading and School Success for the Young Blind Child

When her daughter, who is blind, was three years old, Carol Castellano wondered how she would teach her the alphabet. If her child were sighted, she would have begun helping her recognize letters and numbers, but what does a parent do when the child is blind? Castellano knew the importance of early literacy experiences for children, but could such experiences be translated into a meaningful form for her child?

Castellano began collecting answers to such questions. The result is a new book, *The Bridge to Braille: Reading and School Success for the Young Blind Child*, co-authored with Braille teacher Dawn Kosman. Chapters like Adapting Materials, Doing Math in Braille, Independence in the Classroom, and Using Technology, show parents and teachers how to guide blind children from early literacy experiences all the way to full participation in the classroom. The book demystifies the education of blind children, and enables parents and teachers to give ordinary help with schoolwork to children who happen to be blind.

The Bridge to Braille is available for $12.95 from the National Organization of Parents of Blind Children, a division of the National Federation of the Blind, at 1800 Johnson Street, Baltimore, MD 21230 (410)659-9314, or from Parents of Blind Children-NJ, 23 Alexander Avenue, Madison, NJ 07940 (make check payable to NOPBC).

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TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

The College of New Jersey
School of Education, Department of Special Education

Winter 1998, Vol. 9 No. 1

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TEACHERS WORK TOGETHER TO MAKE INCLUSION HAPPEN

by Orah Raia

If you want to see inclusion and collaboration at its best, you've got to visit the Tulsa Trail School in Hopatcong, New Jersey. Marietta Spagnola and Rosalind Craig, teachers at the school, had a vision for their students, and after a year of planning, they made it a reality. Mrs. Spagnola is a general education teacher for the second grade, and Mrs. Craig is a special education teacher. Together they teach a class of 31 students, 24 who are typical and seven who have disabilities. They are assisted by a paraprofessional, Rose Shinn.

Two years ago they began to think about a program which would provide more inclusive opportunities for their classified students. They believed that these students would benefit from being with their non-disabled peers and vice-versa. They approached their principal, Mr. Joseph Memoli, and he gave them the go-ahead to try some joint time for their classes. Last year they did this on a part-time basis, saw benefits and pursued a full-time program. Once again, Mr. Memoli gave them the freedom to develop their ideas.

Mrs. Spagnola and Mrs. Craig had to tear down some barriers to accomplish this, including physical ones. A wall adjoining the two classrooms was removed to provide a large open classroom setting. This accomplished a great deal. The new classroom provides a larger space for both group and individual work. All the students have access to the equipment, materials and learning centers in both rooms, which include cooking, listening, art, writing, reading, science, easel, clay, blocks, puzzles, and computers.

Technology is Integral Part

I was fortunate to visit Tulsa Trail School on the day the teachers introduced their Internet access and a scanner to their students. Mrs. Craig sat down and accessed the Yahoo site. She proceeded to check the day's weather. The students would now be able to do their daily weather report by looking it up on the Internet in addition to relying on observations out the window.

The parents of the non-disabled students have been pleased with the positive benefits this has had for their own children, and the parents of the students with disabilities have been surprised and delighted at the progress their children have shown.

Mrs. Spagnola then proceeded to scan a student's class picture into *ClarisWorks*. The students are writing to their pen pals, a group of high school students who come into the school on a regular basis to talk with the children. Now, in addition to writing letters, the students can include their pictures. Mrs. Spagnola asked who would like to work on their pen-pal letters and all hands shot up!

Both teachers foster independence in their students, and the non-disabled students are natural peer supports to their fellow classmates. One of Mrs. Spagnola's favorite comments when a

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TECH-NJ is an official publication of the School of Education, Department of Special Education at The College of New Jersey. It is written by students and faculty and is designed to support professionals, parents, and computer-users in their efforts to use technology to improve our schools and to enhance the lives of people with disabilities. In order to facilitate local networking, emphasis is placed on resources and innovative practices in and around the New Jersey region.

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TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

Volume 9, Number 1

EDITORIAL

As we go to press, the new Rules and Regulations pertaining to the reauthorization of IDEA (the federal law guaranteeing a free public education to all children with disabilities) are eagerly anticipated. This latest version of the law will take effect July 1, 1998, and school districts and parents have begun to gear up in preparation for the changes. For those who recognize the value of assistive technology in the lives of children with disabilities, this is good news.

P. L. 105-17, as it is now called, has significantly strengthened the role of assistive technology in the education of children with disabilities. As outlined in section 300.346, the IEP team must now specifically consider five "special factors" when developing IEPs:

- Positive behavioral interventions for children whose behavior impedes their learning,
- The language needs of children with limited English proficiency,
- Instruction in Braille for children who are blind,
- The *communication needs of all children*, including opportunities for communica tion with peers, and
- *Whether the child requires assistive technology devices and services* (italics mine).

This additional language hopefully will serve to alert IEP teams that augmentative communication and assistive technology are no longer merely vague possibilities under the law but are, rather, a consideration for **every** child who requires special education services. This should make it easier for parents to get augmentative communication and/or assistive technology written into the IEP (when appropriate), which, we have learned, is the only way to get them integrated into the curriculum.

Of course, as everyone knows, the gap between what the law requires and what actually transpires on a day to day basis, remains, unfortunately, formidable. We - teachers, parents, therapists, school administrators, higher education faculty - need to be outspoken advocates for the integration of assistive technology and augmentative communication into the educational process. We need to continue to demonstrate best practices in our use of technology in the classroom, and we need to publicize the work of others whom we consider exemplary technology practitioners. When school district personnel witness for themselves the dramatic differences in students' school experiences brought about by assistive technology, they will understand the new language of PL105-17, and they will begin to translate the words into action.

USER PROFILES

ASSISTIVE TECHNOLOGY PROMOTES RAPID ACADEMIC ADVANCES

by Gerald Quinn

Clear, bright, dark eyes peer at the cursor as it moves across the computer screen in highly selective and controlled increments. Noticing me, the young man pauses, smiles and says, "Hello, I'm Pintoo. I'm happy to see you." I introduce myself and glance at the journal entry on the screen; it tells of my anticipated arrival and our interview.

Although he has difficulty moving due to athetoid cerebral palsy, Pintoo turns toward me by maneuvering his lean frame with a wriggling kind of motion. He explains that he and his speech therapist, Monica Clarke, are refining the settings on his new Macintosh Powerbook 1400cs. "I like this a lot," he says. He access the Powerbook using a *Sip & Puff switch* (Enabling Devices). Used in connection with *Discover: Switch* (Don Johnston Incorporated), it enables Pintoo to input into his computer with single switch scanning, in lieu of a keyboard.

Linda Peroff, department head for Speech and Language Therapy at the Cerebral Palsy Center of North Jersey's Horizon School in East Orange, NJ, joins us in the classroom. She shares her enthusiasm for Pintoo's use of the computer, "The computer is great in our classrooms. It opens doors and makes achievement possible. It helps students bypass problem areas and enables them to work with their abilities. Handwriting, for example, is no longer an obstacle to written expression. As with Pintoo, students move beyond former obstacles; they don't get stuck." Clarke sees the computer maximizing her students' abilities and enabling them to achieve greater levels of independence. Pintoo adds, "I take things home that I've done at school during the day, too." A quick glance at his computer's directory indicates sizable files.

First School Experience at Age 9

Pintoo has come a long way in his short time at the Horizon School. Born in India, he spent his first eight years at home with his family, whose dominant language is Gujarati, a dialect of Hindi. Pintoo credits watching TV for his fluency in English. He speaks Gujarati, as well. Attending school for the first time when his family moved to New Jersey, he has demonstrated incredible academic achievement. In only one year's time he has advanced to second grade levels in math and reading.

Pintoo accesses his PowerBook with a Sip & Puff switch and Discover:Switch.

Scanning with Write:OutLoud & Co:Writer

Pintoo's computer enables him to complete his school work with relative ease. His teacher, Ruth Mize, working with speech therapist, Monica Clarke, has taught him to use *Co:Writer* (Don Johnston Incorporated) the word prediction program (see review on page 12), with *Write: OutLoud* (Don Johnston Incorporated), the talking word processing program. Using his *Sip & Puff switch* and a scanning array from *Discover: Switch*, he activates the switch by puffing when the desired letter is highlighted. When scanning is used in conjunction with *Co:Writer*, selecting the letter "P," for example, presents a list of predetermined words beginning with that letter. *Co:Writer* then scans the list of words. When the scan reaches the word he wants, Pintoo puffs the switch again, and the word is entered into the word processing document. To speed things up, Pintoo and his teachers/therapists have added custom lists of frequently used words and expressions to the *Co:Writer* dictionary.

"We've found that Pintoo utilizes a sip and puff switch better than voice activated software," explained Clarke. He speaks clearly and is able to use voice commands with the computer, but using his voice tires him very quickly. It is not strong enough for extended work on the computer. While his current setup is adequate, he is always on the lookout for new and better access tools. Reflecting upon his many experiments with various computer input devices, he explains, "You have to try everything."

Adaptive Tools for Math

Mize shares that Pintoo is strong in math and written expression. He enjoys current events, too. Pintoo adds, "I want to read the news online. I'm getting a modem so I can get online. I want to send e-mail to the President, Governor, and others who can help people."

Pintoo beams with pride as he tells me that he uses *Big Calc* (Don Johnston Incorporated) for math. His teacher shares that they are awaiting the receipt of *Access*

(continued on page 6)

COPING WITH WITH LEARNING DISABILITIES

by Maryann Bowne

Debbie, 30, a single mother of two children, was identified as having a learning disability when she was in the first grade. Due to frequent moves, she attended various elementary schools where she was always placed in a special class for Reading and Math. According to Debbie, neither the elementary schools nor her high school knew exactly what type of learning disability she had, but it kept her in basic skills classes through 12th grade. She explains that her weakest area was language, particularly writing. She frequently had to rewrite assignments which she found to be very frustrating.

Debbie had her first opportunity to learn some computer skills after graduating high school. Although the equipment and software were outdated, she did learn some basic computer literacy skills, and this experience helped her acquire a job at Bally's Grand Hotel and Casino in Atlantic City.

Enrolls in Office Technology Program

After moving to Florida, having two children, then divorcing and returning to New Jersey, Debbie decided that her lack of skills would result in only minimum wage jobs. With two children to support, she realized that the most likely path to success was to return to school. Debbie is currently enrolled in the Office Technology program in a proprietary business school. Initially, she had added medical office training to her basic course, but the demands of medical terminology proved to be too much for her so she dropped the extra courses.

Since beginning her training Debbie has learned a variety of computer applications, such as *WordPerfect*, DOS and 6.1 versions (Microsoft), Microsoft *Excel* and *Access*. Her later courses will include Microsoft *Word* and *PowerPoint*.

I had the opportunity to be Debbie's instructor for both Business Communication and Word Processing (including *Excel* and *Access*). Although she struggled with weekly spelling tests and applying basic proofreading skills in Business Communication, Debbie did not display the same difficulties when learning various software concepts. She has been a quick learner, asking relevant questions, and showing an ability to problem solve.

Using the word processing programs, particularly the spelling and grammar checking tools, has enabled Debbie to compensate for her learning disability. All students are required to spell check their documents before submitting them to the instructor. These documents are typed from straight copy, although some do contain intentional errors. Debbie goes beyond this and uses the grammar check. She particularly enjoys finding mistakes in textbook assignments.

A Sample of Debbie's Handwriting

5. It helps me alot. I can fix my mistakes and spellcheck my papers without having to keep rewrighting everything over & over again.
6. Alot. I found out Computers & Accounting come easy and I don't transpose my number as much as my letters.
7. spell check, grammatik, typingtutor, my gregg book, WordPerfect 6.1
8. I use WordPerfect 6.1, type up my spelling words, spellcheck them, Print them out, then I write them. I also type them to Practice My Spelling & My typing at the same time.
9. The Problems or frustrations I might have would only be when the computer, & Printer or keyboard are not working the way they are spposed to.
10. You can see it in my Timed writing a lot of my letters are transposed in one way or another.

Debbie's learning disability is very evident in her poor spelling skills, although the transpositions are far less frequent when she is dealing with numbers rather than with words. She has shown herself to be an excellent accounting student, having earned an "A" in the first 12 weeks of the class.

Computer as a Study Tool

I have delighted in watching Debbie use various strategies to cope with her disability. Knowing that weekly spelling tests could be her nemesis, she decided to use the computer as a study tool. Using *WordPerfect 6.1*, she would type her spelling words, spell check them, print the list, then retype them as needed for extra practice. Not only did this give her more practice using the software, but it also helped her increase her typing speed (which is affected by her learning disability), and improve her weekly spelling tests. This young lady knows what tools best fit the job!

Debbie will continue in her training program until graduation in July. She hopes to secure a secretarial job that will give her the opportunity to use her newly acquired computer and accounting skills. Would her career goal come to fruition without the use of the computer? More than likely not. In pre-computer days, Debbie tried to use the typewriter as a writing tool and to quote her words exactly, "It was a pain." The computer has been a keystone for Debbie. To her, the computer has been and will continue to be an invaluable tool to her success.

ΔΔ

Maryann Bowne is a graduate student in the Department of Special Education at The College of New Jersey.

BEST COPY AVAILABLE

AlphaSmart KEYBOARD CONNECTS SCHOOL AND HOME

by Melissa Drew

Tammi is a 15-year-old high school student who attends a special services school district. She is a very active student who loves school. Last year, she participated in chorus, cheerleading, the school play, and student counsel. She has short, dark blond hair and blue eyes. Tammi easily looks 18 or 19-years old (a fact that makes her father crazy!). Tammi has cerebral palsy and uses a wheelchair for mobility. Her power wheelchair is her favorite color - hot pink. Tammi also has a vision impairment which is corrected with glasses.

Means of Access

Tammi has been using computers for many years. While she has the ability to write, her writing takes great effort and is not consistently legible. Therefore, she prefers typing to writing and likes having the ability to correct any mistakes before printing. At home, Tammi uses a Macintosh LCIII which she accesses without any adaptations. She uses both hands to type but relies mostly on her index and middle fingers to strike keys. She is very familiar with the QWERTY keyboard layout. Although Tammi's typing is slow, she makes few mistakes.

Choosing the AlphaSmart

Two years ago, Tammi and her parents decided it was time to shop for a laptop computer. Tammi was just starting high school, and she needed a computer that was portable and available throughout the school day. Tammi's parents knew that they wanted a Macintosh PowerBook, but the cost was prohibitive. Tammi's mother had been doing some research about technology options and found an article in the **NJEA Magazine** about a teacher in southern New Jersey who had been using an *AlphaSmart* (Intelligent Peripherals, Inc.) keyboard with the students in her resource room. The selling point for this classroom teacher was its durability; the selling point for the school was its price. For less than $300 each, a classroom of children could each have access to a simple word processor for note taking and report writing. The information stored in the memory of the keyboard can be easily transferred to Macintosh or Windows computers for further editing and printing. Tammi's mother's only concern was that the small LCD display might be difficult for Tammi to see. After some consideration, they purchased the keyboard for Tammi's birthday.

Tammi practiced with the *AlphaSmart* that summer and returned to school with it in the fall. Her mother wrote some instructions for connecting it to the school's Macintosh computers and sent them along with Tammi. Soon after Tammi took the *AlphaSmart* to school, the school decided to purchase several for other students.

Hardware

The *AlphaSmart* keyboard is a simple device. It is light and durable, slightly larger than a standard keyboard and weighing approximately 2 pounds. Two AA batteries power the device, and Tammi did not have to change the batteries in the first year she used it. Tammi keeps hers in a padded laptop case which is attached to the back of her wheelchair.

The latest version, the AlphaSmart 2000.

The *AlphaSmart* keyboard has 128K memory. Although that does not sound like much in today's world of memory-hungry software, for text-based files, 128K can hold the equivalent of 64 pages of text. The *AlphaSmart* divides this memory into eight pre-programmed files which can be accessed by pressing designated function keys. Tammi has labeled these keys to correspond with each of her classes (for example, F2 is Spelling and F5 is Civics). Work is never lost because it is saved automatically.

Set-Up

Tammi showed me how she connects her *AlphaSmart* to her Macintosh computer. She needs some assistance plugging in the keyboard but can transfer the files independently. She explained how to do it:

1. Turn on the *AlphaSmart*.
2. Choose the file you want to transfer.
3. Move the cursor on the LCD display all the way to the top row of text.
4. Turn on the Macintosh.
5. Start the word processing program on the Mac, and open a new file. (Tammi prefers *ClarisWorks*.)
6. Plug the *AlphaSmart* into the Mac.
7. Push the <send> key on the *AlphaSmart*.
8. Edit the document in the Mac and print.

Effectiveness

I would like to share some of Tammi's own thoughts on her *AlphaSmart* keyboard: It "helps you do your schoolwork...to learn how to type faster and do spelling. Teachers like *AlphaSmart* because other people don't have to write for me, and I write clearer." She adds, "If other kids can't write, why don't they get a computer (like the *AlphaSmart*) and .....write letters on the computer to friends?"

When I asked Tammi's mother what she thinks the *AlphaSmart* does for Tammi, she summed it up in one word - independence! Tammi can start her homework anywhere, on her own. It is especially helpful when doing repetitive spelling practice.

Tammi was accepted into the Office Skills program at a vocational school. She is very excited about this and feels that she was accepted because of her familiarity with computers. On a typing test Tammi scored at 5 words per minute with no

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INCLUSION

(continued from page 1)

student asks her a question is, "Ask three before you come to me." The students have learned to rely on each other for help. When one young girl returned to the classroom from a speech therapy session, her classmate turned to her and without prompting, filled her in on the assignment they were working on.

The classroom is fortunate to have four Macintosh PowerPC computers (with hopes of adding two more). Two of the computers were obtained through the district and two by grants the teachers were awarded. Additional equipment in the classroom includes *IntelliKeys* (IntelliTools) for spelling and *IntelliTalk* (IntelliTools) used by some of the students with disabilities, including a young boy with Down syndrome, so they can see and hear the words at the same time. The teachers incorporate work on the computer to coincide with the curriculum. For example, for a recent lesson on oceans, they used *Imagination Express— Oceans* (Edmark).

While studying habitats the class used *ClarisWorks for Kids* and wrote Big Books about animals using templates from the program. They have plans in the future to integrate video tape of activities done by the children into *HyperStudio* (Roger Wagner Publishing) stacks which will be worked on by the children, turned back into video tape, and then taken home and shared with their families. In addition, the teachers hope to obtain a digital camera. Plans are underway to make the computers available to families after school hours.

Reactions Are Highly Favorable

The response to this program has been positive for all involved. The teachers are thrilled and say some days their excitement brings tears to their eyes. Their colleagues have expressed interest in the program and Mr. Memoli is thinking about what lies ahead in third grade for these students. The parents of the non-disabled students have been pleased with the positive benefits this has had for their own children, and the parents of the students with disabilities have been surprised and delighted at the progress their children have shown.

This program is an excellent example of how two teachers brought about positive change through their commitment to children. As Margaret Mead said, "Never doubt that a small group of thoughtful, committed people can change the world. Indeed, it's the only thing that ever has."

Software Used by Tulsa Trail Teachers:

ClarisWorks for Kids (Claris)
Co:Writer (Don Johnston Incorporated)
Early Math (Sierra)
Imagination Express - Oceans (Edmark)
Mighty Math Series (Edmark)
Reader Rabbit Reading Development Library 2 (The Learning Company)
Stanley's Sticker Stories (Edmark)
Thinkin' Things 2 (Edmark)
Words Around Me (Edmark) ΔΔ

Orah Raia is a graduate student in the Department of Special Education at The College of New Jersey.

Inclusion Resource

The *Book of Possibilites: Elementary Edition* and *The Book of Possibilities: Secondary Edition* from AbleNet Inc. offer valuable "how-to" resources for educators who serve students with severe disabilities in an included setting. Both books include:

- Tools of the Trade, general information about simple technology
- Over 80 ideas from around the world using simple technology
- Practical tips for addressing common problems and frustrations
- User stories

The *Elementary Edition* addresses ways for all elementary switch users to be included in a variety of math, science, language arts, social studies, spelling and reading activities.

The *Secondary Edition* provides suggestions for including secondary age switch users in a variety of school experiences throughout the day. This book includes sections on secondary academics, general classroom activities like giving tests or reports and non-curricular activities like school plays and sports events.

Cost: $27 per book
To order: contact AbleNet Inc. (800)322-0956.

PINTOO

(continued from page 3)

to Math (Don Johnston Incorporated) so that Pintoo can make up math worksheets for himself and other students in the class.

The program will enable her to customize math activities. It is apparent from the instructional activities occurring in the classroom that peer teaching, in addition to collaboration among the classroom teacher, speech/language therapist, and occupational therapist, is practiced in this classroom with the six students ages nine to thirteen years old.

New Hardware

Pintoo has been awarded a Bellows Fellows Grant from the United Cerebral Palsy Association. The grant, which is a three year contract, has provided a laptop computer complete with printer, fax/modem, CD-ROM encyclopedia, and appropriate wheelchair mount. In addition, the grant supported the purchase of *Discover:Switch* for scanning, the special software for writing which Pintoo has been using, and a service contract. UCPA will monitor Pintoo's progress through semi-annual reports in order to evaluate the effectiveness of this set-up. The laptop, which travels with him from home to school each day, provides Pintoo with more consistent access to the computer.

Technology Offers Power and Control

Pintoo tells me, "The computer gives me a feeling of power and control over what I'm doing. I want to go to college and be a doctor." This interviewer has little doubt that he will realize his dream. He is a remarkable 13-year-old with his eyes on the future. He understands and is comfortable with the computer technology that so effectively levels the playing field by providing access to the world—a world otherwise off limits to students such as Pintoo. He truly is a computer user with a purpose—to live his life as fully as possible.

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Gerald Quinn is a graduate student in the Department of Special Education at The College of New Jersey.

ALPHASMART

(continued from page 5)

mistakes. While Tammi's typing speed is somewhat slow, the school was impressed by her accuracy, enthusiasm, and improvement during the tests. Tammi feels that her *AlphaSmart* helped her learn to type and that whatever she does in the future, she will be using a computer.

Some Considerations for Purchase

There are some drawbacks to the *AlphaSmart* keyboard. The LCD display is only large enough to show four lines of text at one time, and there are no brightness or contrast controls to alter the display for better viewing. It has no spell checking device. There is no way to upgrade the memory such as with a PCMCIA memory card, and there is no 'sleep' mode if you accidentally leave it turned on.

Two practical features for users with physical disabilities are built-in "sticky keys" and options for changing the keyboard layout. If you are looking for a portable, multi-function device and money is not an issue, buy a laptop. But if you need a low cost portable word processor to supplement your desktop computer, the *AlphaSmart* keyboard may be just what you need.

Product Information:

The newest version, *AlphaSmart 2000*, is available for $249.95. It includes a built-in LCD screen and full-size keyboard and enables the user to easily transfer files to a PC or Mac for formatting and printing. It also prints directly for draft printouts.

It has 8 files (64 pages of text/128k), functions on 3AA batteries for 300 hours and has foreign language support.

For more information, contact Intelligent Peripheral Devices, Inc. at (408)252-9400 or on the web at http://www.alphasmart.com.

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TRAINING MODULE

(continued from page 11)

Overlay Layout Considerations: The layout should be determined by the user's cognitive/linguistic abilities, visual/perceptual skills, range of motion, and access method, as well as by the communication situation itself. Considerations include:

- Single or multiple overlays
- Groupings on single overlay
- Size of overall display (start small)
- Arrangement of core and situation-specific messages
- Arrangement of messages in vertical or horizontal pattern by topic, parts of speech, etc.
- Ease of access to important messages
- Information to help the communication partner
- Logical arrangement for branching and encoding
- Use of color on symbols, borders, backgrounds (should provide visual enhancement, not visual clutter)
- Specific demands of each communication situation (placement, portability)
- Opportunities for growth (encoding, combining symbols, etc.)

Tips on Constructing Overlays:

- Use software programs to generate overlays whenever possible.
- If using cut and paste method, use glue sticks instead of white glue.
- If using black and white drawings, photocopy the overlay to keep on file, THEN color the borders or salient features
- Pastel highlighters are good for coloring backgrounds to group items.
- In many cases, colored pencil looks better than markers on an overlay.
- Always laminate the overlays, even if covered by a protective sheet.

Required Readings

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RESEARCH TO PRACTICE

FAST FORWORD™: IS THE HYPE JUSTIFIED?

by Jean Earle

Discussion and debate abound regarding *Fast ForWord*™ (Scientific Learning Corporation), a new computer-based approach to receptive language and auditory processing remediation. Discussion is probably more widespread here in New Jersey because one of the two main researchers/developers is Dr. Paula Tallal from the Center for Neuroscience at Rutgers University where much of the initial research behind the program was conducted.

Fast ForWord is a language training program designed for the estimated 10% of children ages 4 to 14 who specifically demonstrate auditory temporal processing difficulties.

Fast ForWord is a language training program designed for the estimated 10% of children ages 4 to 14 who specifically demonstrate auditory temporal processing difficulties. Tallal and other researchers have found that the inability to process speech at usual rates of speed can greatly inhibit language learning. Children with this specific difficulty of distinguishing among speech sounds often exhibit poor language comprehension and possibly expressive speech challenges. *Fast ForWord* is designed to develop and enhance the particular skill of adequate auditory temporal processing in children who have not developed it in natural developmental ways.

What Makes *Fast ForWord* Different?

Many speech/language and reading programs focus on teaching phonics, a system based on elements of sound called phonemes. Speech is, in fact, composed of even smaller acoustic events or "phonetic elements" which make up phonemes. These elements are rapidly, and rather automatically, processed by most people as syllables, words and sentences are heard or articulated. *Fast ForWord* is constructed and based upon the findings that this ability to process elements rapidly is lacking in many children and can be trained. The computer can be utilized to precisely control and organize the sequence and timing of speech sounds for the training and learning process.

Results of *Fast ForWord* Training

Research studies have shown some dramatic results for children completing the training exercises provided by *Fast ForWord*. In 1995 Dr. Tallal and Dr. Michael Merzenich of the University of California at San Francisco (known for brain plasticity research) took *Fast ForWord* to the field where the studies were duplicated. The results, with greater numbers of children and a variety of settings, are the kind that cause any parent, special educator, or speech pathologist to sit up and take notice. Most children in the studies to date have experienced significant and measurable improvements in acoustic reception, speech reception and language comprehension abilities. The children have moved from below average ranges into normal ranges for skills and abilities that are required for normal language use.

Extensive Training

Going through *Fast ForWord* training for a child, parent and practitioner is an intensive process requiring a major commitment of time, effort and also typically of dollars. The process requires a minimum of 2 hours per day, 5 days per week, of work on games at the computer. Measurable improvements correlate with compliance to the schedule.

The games are not the usual computer games enjoyed by children in the typically fun ways provided by characters such as Millie, Sammy, or even Mavis. There are entertaining interludes and characters, and a token economy system with which you can be creative, but the tasks are repetitive, and students cannot choose to exit a game or go to another until at least fifteen minutes of play is completed. In fact, the only way out during the first fifteen minutes of each game is rebooting your computer, which results in loss of all the data. There are seven games, and during most of the therapeutic course, a child is expected to play five of the seven games each day, preferably for 20 minutes each:

1. *Circus Sequence* provides a series of frequency modulated sounds and is the mainstay of the program (and the built in assessment tool). It builds the rate of processing and temporal sequencing skills.
2. *Old MacDonald's Flying Farm* teaches children to distinguish phonemic Sound Changes.
3. *Phoneme Identification* teaches children to identify and distinguish between some rather similar sounding specific phonemes.
4. *Phonic Match* reinforces memory and reasoning skills using word structures that differ by a single phoneme.
5. *Phonic Words* teaches phoneme and word recognition skills for complex words which differ by a single phoneme (e. g., breathe, breeze; zip, sip).
6. *Block Commander* teaches listening comprehension and syntax through the use of simple sentence structures.
7. *Language Comprehension Builder* introduces increasingly complex sentences to develop higher-level language skills including morphology, syntax, and grammar.

All of the games adjust to [illegible] it's own performance levels and [illegible] the practice experiences positive. The technical difficulty levels of the games adjust after just a few incorrect responses, enabling continuing successes. For word and sentence structures, the programs begin with modulated and digitized speech and gradually build to normal speech speeds - something only a computer can do! Children going through the program have been known to learn to use their own digitized speech to decode words and process speech for themselves - an interesting technique to observe.

Recommended Criteria for *Fast ForWord*

Which students are eligible for *Fast ForWord* and how do you determine whether a particular individual may

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benefit from this training? Comprehensive language measures including clinical evaluations of language functions, tests of language development, tests of auditory comprehension of language, and preschool language screenings are the usual identifiers of children with language learning impairments. Within each of these categories there is a host of commonly used tests and measures. Scientific Learning Corporation recommends that a student's scores on one composite test (not just a subtest) of one standard deviation below the mean is most indicative of a student who may be experiencing some auditory temporal processing deficits, and who is likely to benefit from the training. Once that determination is made, *Fast ForWord* administers the Sequential, Temporal Analysis Report (STAR) which can specifically measure the rates of processing in terms of tone duration and time between tones (interstitial intervals).

Children with various educational labels have undergone training. It should be noted that the length of the training and the ability to successfully undergo the training are influenced by issues of attention (the training requires an inordinate amount of sitting and attention), motor and cognitive access to the computer and tasks, and effects of various medications. Thus the requirements rightfully include training under the auspices of professionals, even in natural environments and home settings.

Training Regimen for Professionals

Because of the potential for misuse, the developers of *Fast ForWord* are exercising care in their marketing and distribution of the software. Professionals who are interested in using the software are required to complete a certification program which includes a half day training workshop (at a cost of $350) and a written or on-line examination. The training workshop focuses on an overview of the research related to this new method of intervention and on technical aspects of the *Fast ForWord* program, including internet reporting.

One 14-year-old student has said, "I really think I hear better, and I hear and understand things in school that I never heard before."

To be eligible for the training, professionals must already have background and experience in the following: understanding of auditory temporal processing, engagement techniques and behavioral motivation for children, human/computer interaction issues and techniques, and expertise in using computers. Most certified professionals are speech therapists, psychologists, or special educators, with the large majority being speech therapists.

This writer completed the professional training and became certified last June. With a background in special education and additional experience as a parent of a child with disabilities, she has assessed 12 students to date, many of whom have significant disabilities such as autism or attention deficit with hyperactivity disorder (ADHD). Only two have completed the entire program to date. While the results of their participation will be added to the formal research study being conducted, anecdotal evidence is promising. One of the older (14 years old) students said, after decidedly not enjoying her weeks of study, "I really think I hear better, and I hear and understand things in school that I never heard before."

For More Information:
Internet: http://www.fastforword.com

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Jean Earle, M.Ed., is a student of Assistive Technology and guest lecturer in Special Education at the College of New Jersey. She is a partner of Computer Education Institute in Warren and parent of a seven year old Fast ForWord graduate.

Personal Experience With *Fast ForWord*

My own daughter, Morgan, with multiple neurological complications and anti-convulsant medications, engaged in the program from July to Novembe 1997. She began with a certified educational therapist, transferring after one month to home, which provided greater flexibility in practice times and lower total costs. After the first month of the program there was a noticeable difference in the quantity and flow of Morgan's expressive language. After a few additional weeks, we noticed that she began to accentuate phonemes in both oral communication and in her attempts to decode words and read.

In post-program testing, however, Morgan still demonstrates very limited temporal processing capability. While in some ways this is disappointing after our intensive efforts, the fact that we know this and can include the specific information in her IEP, greatly aids us in defining service needs and strategies for Morgan in classroom and learning environments. My family is among those who believe in making innovative therapies available to special needs children who may not technically meet the standard criteria. Improvements are relative!

TRAINING MODULE

THE TEACHER'S ROLE IN AUGMENTATIVE COMMUNICATION

by Amy G. Dell, Anne M. Disdier, Amy Goldman, and Patricia L. Mervine

Rationale for Training Teachers on AugComm

Being able to communicate is directly related to increased independence, success in the workplace, greater self-determination and control over ones life, increased opportunities for participation in ones community, and improved access to and quality of children's educational experiences. Therefore, the many children in special education who lack an effective means of communication are in serious need of augmentative communication systems. Teachers have a major role to play in designing and securing appropriate augcomm systems for their students and in providing the ongoing training which is needed to integrate augcomm systems into students' daily lives.

As the TASH Resolution on the Right to Communicate states, "The right to communicate is both a basic human right and the means by which all other rights are realized. . .We must ensure that all people have a means of communication which allows their fullest participation in the wider world" (TASH, 1994).

Plan for Infusion

This training module can be infused in any course that focuses on teaching students who cannot speak, such as those with physical or multiple disabilities, severe mental retardation, and/or autism; any course that focuses on language/communication disorders; or any course on assistive technology. The entire module requires 10-12 hours of class time to complete.

Competencies Addressed

Upon completion of this training module students (professionals) will be able to:
Enhance the communication abilities of individuals who have disabilities which interfere with effective communication through the appropriate use of augmentative communication systems.

- Demonstrate an understanding of:
  - what communication is and its importance in people's lives
  - low tech" and "high tech" augcomm systems and how they can be used, their strengths and limitations
  - factors which must be considered when helping an individual choose an appropriate augcomm system
  - the roles of related services personnel in selecting an appropriate augcomm system
  - the perspectives of parents and consumers in selecting an appropriate augcomm system
- Play a key role in providing information about student's vocabulary needs - both generic and activity-specific vocabulary and in making pertinent vocabulary available across contexts.
- Integrate the augcomm system into daily routines, classroom activities, and other school activities (such as lunch and socializ ing) and motivate student to use it in context.

Hands-On Assignments*

Creating Customized Communication Board Overlays:
Using either *Boardmaker* or *Speaking Dynamically* (both from Mayer-Johnson), students must design a communication board overlay which addresses a particular communication need of a particular person. Students must follow the decision-making process described on the assignment guidelines. After designing and printing their board, students write a paper which explains the purpose of the board, the way vocabulary and symbols were selected, design considerations, and technical details. Students then present their communication board to the class.

Interview/Observation Report of an Augmentative Communication User:
The guidelines for this assignment emphasize the actual use of a person's augcomm system, rather than a technical description. Students must describe the system's vocabulary, the kinds of communicative interactions and functions it facilitates, its effectiveness, and the appropriateness of the system for the individual. Lastly, students need to examine how the augcomm system has/has not benefited the user.

Simulation Activity (optional): Students role-play having a disability which includes not being able to speak intelligibly. Students pick a card which describes a condition, and they must assume the role for two half-days. A reflective essay asks them to discuss how others responded to them and their feelings regarding not being able to communicate.

Summary of Training Activities*

The Importance of Communication

•Video segments from *Nova: Finding a Voice* (1984): especially the autobiographical segments by Dick Boydell and the segments featuring Michael Williams with his own voice, his wife's voice, and his first talking augcomm device, the HandiVoice.

•Video segment from *People in Motion, Part 2* (1995): profile of Bob Williams working as Assistant Commisioner for Developmental Disabilities and using his *Liberator* (Prentke-Romich).

•A discussion of Ruth Sienkiewicz-Mercer's book *I Raise My Eyes to Say Yes*, in particular the question, how did Ruth's inability to speak affect her life?

Benefits and Limitations of Unaided and Aided AugComm Systems

Small Group Activity on Unaided Communication: Students are placed in groups of 3 and are asked to communicate with each other without speech. In each group they take turns being the "sender" of a message, the "receiver" of the message, and the observer. A list of written messages is provided to each group so that no 2 students in a group have the same list. Students can use gestures, point to real objects, pantomime, try sign language, anything; the only restrictions are on the sender: no speech, no writing, and no use of "charade" conventions (like the "sounds like" gesture). In the triads, the observer can time how long it takes for a message to be conveyed. Following the activity, a large group discussion addresses key issues regarding unaided augcomm systems.

Small Group Activity Using Alphabet Boards: Again in groups of 3, taking turns being the sender, receiver and observer, students are each given an alphabet board (3 different arrangements of letters: alphabetical, QWERTY, and frequency of use arrangements) and are asked to carry on a 3-4 minute conversation using their board. A large group discussion follows the activity.

Lecture/demo of AugComm Devices

This activity varies depending on which augcomm devices one can obtain/borrow. It is important to include a relatively "low-tech" device like a *Wolf* as well as "high-tech" devices like an *AlphaTalker* or *Liberator*. Also, it is important to contrast synthesized speech and digitized speech. A discussion of symbol systems goes hand-in-hand with the devices, so a lecture on *Picture Communication Symbols*, for example, goes well with a *Message Mate* (Words +), as does an explanation of *Minspeak* with any Prentke-Romich system. The *Minspeak* Training Kit from Prentke-Romich contains several good activities for helping students understand the concept of semantic compaction.

Topics to be presented include input method considerations, output method considerations, language processing considerations, and practical considerations such as portability, cost, etc.

Issues in Message Selection

This topic is so important - so related to the success/failure of augcomm - that in cases of time limitations, it should take priority over the lecture/demo on augcomm devices. The devices will continue to change (in 3 years there will probably be a whole new set to learn) but the issue of vocabulary selection will remain paramount. Topics to be presented include functions of communication interactions, functions of messages, features of successful messages, and selecting messages for a particular activity or situation.

Small Group Activity: Assign one of the following scenarios to each small group and instruct the students to brainstorm vocabulary which would be both functional and age-appropriate for an activity-based communication board.

- Preschool or primary level: For use in story-time activity
- Upper elementary level: For use on a nature walk (science activity) on a spring day
- Teenagers: For socializing with ones friends and shopping at the mall

Designing Communication Boards (manual or electronic)

Symbol Systems: The symbolic representation should be determined by the user's cognitive/ linguistic abilities and visual/ perceptual skills. Options include:

- Actual objects
- Miniatures--magnets, doll house items, decorative items from craft shops
- Actual photographs of specific objects
- Similar photographs, e.g., card sets from teaching materials catalogs
- Colored detail drawings--*Boardmaker 3.1* (Mayer-Johnson); *IntelliPics* (Intellitools); *Pick 'n Stick* (Imaginart)
- Black and white detail drawings--*Boardmaker* and *Picture Communication Symbols* (Mayer-Johnson Co.)
- Line drawings--*Boardmaker* and *Picture Communication Symbols* (Mayer-Johnson); *Core Picture Vocabulary* (Don Johnston)
- Symbols, e.g., Bliss, Rebus, and Sigsymbols
- Orthography (written words and alphabet)

(continued on page 7)

*Assignment guidelines and detailed lecture notes are available by request through e-mail: technj@tcnj.edu

SOFTWARE REVIEWS

CO:WRITER

by Deborah Newton

SUBJECT AREA: Writing in any subject

PUBLISHER: Don Johnston Incorporated
(800)999-4660
http://www.donjohnston.com

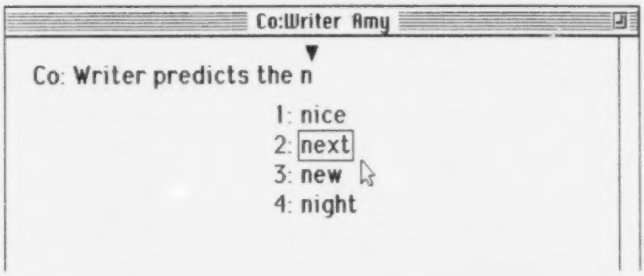
COST: $290 single user
$1,015 lab pack (5 user)

INTENDED AUDIENCE: Ages 7 - Adult; users with physical or learning disabilities

NOTABLE SYSTEM REQUIREMENTS:
Mac: SE or higher, System 7, 1.2-2MB RAM for *Co:Writer*, additional .5 MB for minimum-quality speech and up to 2 MB for highest-quality speech; any word processing program.
Win: 486-based PC, Windows 95, 4 MB RAM for *Co:Writer*, SoundBlaster or compatible sound card; any word processing program.

DESCRIPTION: *Co:Writer* is an intelligent word prediction program that has been available for the Macintosh computer for a number of years. It has recently been released in a format compatible with Windows 95 and retains the same outstanding features that have made it a favorite among Macintosh users.

Word prediction programs, such as *Co:Writer*, were initially designed for users with physical disabilities, to reduce the number of keystrokes needed to complete intended words. The latest research, however, shows that word prediction can also be a useful tool for students with learning disabilities.



A sample screen from Co:Writer. The user is typing the sentence, "Co:Writer predicts the next word."

As a user types the first letter of a word, *Co:Writer* displays a numbered list of words that start with that letter. If the intended word is displayed, the user simply types the number in front of the word or points to it with the mouse and clicks to select it. If the word is not displayed, the user types the next letter, and additional choices will be displayed. Users can select the number of predicted words to be displayed (from 0-9) to best meet individual needs.

As an additional support, speech output can make selection easier for users with reading difficulties or visual impairments. *Co:Writer*'s speech options include reading aloud each predicted word, speaking the selected word, and reading the completed sentence. A variety of voices are available, pronunciations can be edited, and the rate of the speech can be adjusted.

Co:Writer must be used in conjunction with a word processing program. When an ending punctuation mark is typed the complete sentence is transferred to the word processing document. It is within the word processing program that users edit, format, save, and print their work. *Co:Writer* can be used with any word processing program, and can also be used with a variety of other programs that require text entry.

STRENGTHS: A powerful feature is the "Predict Ahead" option. After the first word is typed *Co:Writer* will automatically suggest words which the user might want to choose, even before a letter has been typed. *Co:Writer* makes its predictions based on the letters typed, rules of grammar, and past usage; the more recently and the more frequently a word has been used the more likely it is to be predicted in the future. *Co:Writer* also collects new words and uses them for prediction so it adapts to individual writers.

Co:Writer has several keystroke saving features. When the "Auto Space" option is selected *Co:Writer* will automatically capitalize the first word in a sentence, add a space after a word has been selected, and add two spaces after an ending punctuation mark. The "X:PND" feature allows users to create abbreviation expansions, whereby phrases and sentences can be entered with just a couple of keystrokes. "X:PND," coupled with the speech output, allows *Co:Writer* to be used for augmentative communication, as well as for writing.

The intelligent way that *Co:Writer* makes predictions and the way it adapts to individual users are among its greatest strengths. Providing dictionaries of 2,000, 10,000, and 40,000 words makes *Co:Writer* appropriate for users at every level. The additional options, including customizing the number of words predicted, using speech output, and built in scanning for switch users, combine to make this a powerful tool for users with a variety of disabilities.

SUMMARY: *Co:Writer* is an intelligent word prediction program. For users with physical disabilities *Co:Writer* is an especially useful tool for reducing the number of keystrokes that must be typed to complete words and sentences. For users with learning disabilities, *Co:Writer* provides many features which support the process of writing so that users are no longer limited to only those words they know how to spell.

The wide variety of options and ease of use allow this program to meet the individual needs of children and adults. *Co:Writer* stands as a perfect example of assistive technology helping to increase the independence and productivity of people with disabilities.

Deborah Newton is an alumna of the graduate program of the Department of Special Education at The College of New Jersey.

ULTimate READER

by Rebecca Artessa

SUBJECT AREA: Reading Utility

PUBLISHER: Universal Learning Technology
(commercial affiliate of CAST)
(978)538-0036
www.cast.org

INTENDED AUDIENCE: Ages 9 - Adult

COST: $199 single copy; lab packs and site licenses also available.

NOTABLE SYSTEM REQUIREMENTS:
Mac: 68030 or better processor with 5MB RAM or a Power PC with 8 MB RAM, 2 MB of hard disk space (up to 8 if Plaintalk is not yet installed), 12 inch or larger monitor with 256 color capability.
Win: 16 bit 386 or better with 25 mhz minimum processor, 4 MB RAM (16 recommended), SoundBlaster or Windows supported sound card, 12 inch or larger monitor with 256 color capability.

EDUCATIONAL GOALS: To enable people with reading disabilities or low vision to access literature and read textbooks assigned in inclusive classrooms.

DESCRIPTION: *ULTimate Reader* is a software program that adds spoken voice and visual highlighting to any electronic text. The user can scan text in, download it from the Internet, or copy and paste from existing word processing documents. *ULTimate Reader* then highlights and/or speaks text. The program allows the student to read text from subject specific material and answer questions within the document. There are optional settings for print size and color of both highlighted words and text, making this very useful for low vision students.

ULTimate Reader offers several options for different grade levels. For example, in the elementary level suggestions range from math word problems or math facts practice to playing with spelling words or giving tests. The middle school/high school section has several interesting ideas for using the program, including reading for meaning, a set-up that allows teachers to scan sections of text and follow the selections with questions about the main idea. The teacher can write the answers and have them hidden so that the student can self-check. The program also has options for ESL and adult literacy.

Students can have folders set up and the teacher can lock screens so that no changes can be made to them. A large, on-screen control button strip can be set up on the screen in three different ways and can be accessed through use of the mouse or keyboard. It can be hidden if desired.

STRENGTHS: *ULTimate Reader* makes print-based materials accessible to students with disabilities who would otherwise be unable to participate in reading activities. It makes it possible for students to be participants in inclusive classroom settings. The quality of speech is excellent and the possibilities for use are quite expansive. An interesting feature is the "exceptions dictionary" that allows users to change the pronunciations of words that are not spoken in the students' particular dialect. This allows a teacher to customize word pronunciation, making them more "hearable" and understandable. All menu items and buttons may be set to speak.

WEAKNESSES: To use the software successfully, a great deal of time is required to prepare individual lessons. It is also necessary to own a flatbed scanner and optical character recognition software, and this can cost up to $1,000.

SUMMARY: *ULTimate Reader* is an innovative new software program that works in both a compensatory and remedial capacity for students. It makes print accessible to anyone and can be used by ESL students, students with learning disabilities, and persons who are blind or have low vision. The many optional settings make this a helpful program for users with various disabilities. Teachers will undoubtedly find many useful and clever ways to use its many options.

Rebecca Artessa is a senior in the undergraduate program in the Department of Special Education at The College of New Jersey.

ULTimate KidBooks

Released in August by Universal Learning Technology, *ULTimate KidBooks* is a multimedia publishing system that enables teachers, parents, and specialists to create electronic talking books with built-in educational scaffolds. *KidBooks* supplements the written word with flexible reading supports including highlighting, text enlargement capabilities, and synthesized speech. Designed for children from preschool to grade 5, this program is ideal for younger children because it uses a simple page-by-page structure with pictures.

KidBooks is accessible to children with physical disabilities because it supports access via a single switch. The new Copyright Law for Alternative Text states that books can now be converted into alternative forms as soon as they are in print, without the publisher's permission. It is now possible to create digital libraries of books used in schools' curriculums so that children of all abilities can all access the same materials.

KidBooks is currently available in a Mac version only (Windows version in development) as a building licensed product for $299.

DAZZLE

by Deborah Newton

SUBJECT AREA: Creativity

PUBLISHER: SEMERC
available through ProMedia, Inc.
(800)462-0930
www.promedia-semerc.com

COST: $[illegible].00

GRADE LEVEL: K-8

NOTABLE SYSTEM REQUIREMENTS: Available in **Windows** format only.

EDUCATIONAL GOALS: To help children develop their creativity.

DESCRIPTION: *Dazzle* is a computer drawing and painting program that provides an opportunity for students to experiment with a variety of tools and creative effects. Many standard paint tools are available including a pencil for drawing thin lines, a line tool, tools for drawing geometric shapes, and a fill tool. Other tools are rather unique and can be used to create unusual visual effects. The diffuser brush, for example, "swaps" small dots of neighboring colors, making the boundaries between colors sort of fuzzy. The water brush is a square brush used for applying 'water' to create an interesting blurring effect. The symmetry tool allows painting on one part of the screen to be repeated symmetrically, left/right and/or up/down.

This program features a completely customizable interface so that *Dazzle* can be configured to meet the needs of individual users. Tools can be easily added or removed from the tool bar so students have access to only the tools they know how to use. For students needing larger tool icons, simply holding the shift key and double-clicking will enlarge an icon. Five different color palettes are available to match the decision making and/or physical ability of various users. Once *Dazzle* is configured to meet a specific individual's needs, that configuration can be saved and loaded each time the individual uses the program.

STRENGTHS: *Dazzle*'s greatest strengths are its ease of use and its highly customizable interface. The enlarged tool icons make this painting program more accessible than most others for children with motor impairments. Being able to limit or expand the number and type of tools available keeps *Dazzle* age-appropriate for users of many ages.

WEAKNESSES: To correct mistakes, *Dazzle* provides an *undo* tool to reverse the last action and a *select area* tool which allows users to clear the area within the selection rectangle. On small areas it is difficult to use the selection tool with a high degree of accuracy and it would be nice to have an "eraser" to make some small corrections.

SUMMARY: *Dazzle* is a painting package which can be configured to meet individual users' needs. Users can add or remove tools from the toolbar to make the program as simple or advanced as desired. Special effects make the program unique and especially appealing. These special effects are produced with the diffuser brush, water brush, tint brush, stamps, and symmetry tool. Once the program is configured just right, users can save the configuration to have it readily available the next time they are feeling creative.

Other Software Titles from SEMERC

SEMERC is a British software publisher whose products debuted in the United States at Closing The Gap in October, 1996. They are represented in the U.S. by ProMedia, Inc.

Smart Alex - Smart Alex is a big cartoon character who laughs, talks, cries, blows raspberries and does many other actions that simulate feelings. Alex can also express emotions through facial changes. At higher levels, users can hold simple conversations with Alex to talk about likes and dislikes. If Alex does not understand a word, he'll ask more about it and commit it to memory.

Spot On Games - The six games in this program are played by pressing a single switch, the space bar or clicking a mouse button. The games are designed to test or build reaction and anticipation skills.

The Switch On Series - *Switch On Original*, *Switch On Travel*, and *Switch On Zoo* offer activities for early language development, switch training (including turn-taking), concentration and tracking skills. Users build up big pictures that animate with realistic sound effects. Other activities include picture matching, reaction timing and picture recognition.

The Touch Games - This series, *Touch Games 1*, *Touch Games 2*, and *Touch Funfair* were specifically written for use with touch screens. The programs offer simple activites for non-readers, such as tracking and dragging skills, short-term memory sequencing, pre-writing, dress-up and face-building.

Deborah Newton is an alumna of the graduate program of the Department of Special Education at The College of New Jersey.

SENSORY SOFTWARE PROGRAMS

by Cynthia Ruetsch

SUBJECT AREA: Visual & Auditory Stimulation

PUBLISHER: Sensory Software
available from ProMedia, Inc.
(800)462-0930
www.promedia-semerc.com

COST: $69.95 single copy; $175 lab pack (5 user)

INTENDED AUDIENCE: Individuals with cognitive and multiple disabilities who would benefit from sensory stimulation.

NOTABLE HARDWARE REQUIREMENTS: Available in **Windows** format only. Optional hardware: *TouchWindow* or other access/input devices; microphone for *Speak Up!*

EDUCATIONAL GOALS: Visual stimulation and discrimination, auditory stimulation, cause and effect, prediction and encouraging vocalization

DESCRIPTION: Sensory Software offers a variety of programs designed to motivate students to develop attending skills. Two of the programs, *Touch Here!* and *Look Here!*, are designed for visual stimulation. *Touch Here!* utilizes basic geometric patterns that move around the screen through mouse input. This program also encourages tracking and scanning as different color bars can be moved from left to right across the screen. In *Look Here!* the teacher directs the activity (i.e., the teacher uses the mouse/keyboard) while the student watches the screen for flashing checkerboards or moving lines and circles.

Three of the programs are designed to encourage interacting (playing) with pictures. *Build It* and *Knockout* are great for developing prediction skills and closure. In both programs, students build pictures piece by piece and have an opportunity to identify the "whole" picture. *Picture This Too: Flip It and Slider!* offers two activities. In *Flip It*, a picture or series of pictures are presented with one piece "flipped" horizontally or vertically. Students are asked to find the flipped picture. In *Slider*, students are presented with a picture broken into square puzzle pieces that have been rearranged. Here students must slide each piece to its correct place to complete the puzzle.

Other titles in this series include *Kaleidoscope*, a versatile painting program with features such as stamps, pictures to color, and blank canvasses for creating artwork with painting tools. Users can configure the program and create mirrored and kaleidoscope images; *Listen Hear!*, a customizable auditory stimulation program; and *Speak Up*, a program to encourage vocalization by having images change according to the user's volume of sound (for Windows 95 ONLY).

STRENGTHS: All programs offer a variety of options for changing activity features such as color, size of objects and speed. For those programs involving pictures additional picture files (bitmap .bmp and windows metafile .wmf) can be added to increase choices to include individual student preferences. Depending on individual student abilities, activities can be directed by the teacher or by the student. Additionally, *Listen Hear!*, the auditory stimulation program, can be used alone or its sounds can be imported for use in other programs.

SUMMARY: These visually appealing programs offer a variety of options so they can be configured to meet individual needs. The uncluttered backgrounds and high contrast graphics help to focus users' attention. Because users can add their own sounds and animations, these programs can be age-appropriate for all levels.

Cynthia Ruetsch is a graduate student in the Department of Special Education at The College of New Jersey.

EDITOR'S PICKS FOR EARLY LEARNING SOFTWARE

How Many Bugs in a Box? (Simon & Schuster Interactive):
Price: $19.95 Win/Mac CD-ROM
Based on David A. Carter's best-selling pop-up books, this program offers wacky, colorful entertainment for children ages 3-6. Three skill levels guarantee longevity as the program grows with the child. Features include an interactive storybook to Read Along and Explore, eight learning games for number recognition, counting, and basic arithmetic skills, and crazy counting songs.

More Bugs in Boxes (Simon & Schuster Interactive):
Price: $19.95 Win/Mac CD-ROM
The sequel to *How Many Bugs in a Box?*, this program again captures the zany mood of David A. Carter's book. *More Bugs In Boxes* encourages children to explore the world of colors and visual observation. Features include three skill levels, a Read Along and Explore interactive storybook, a matching game for reinforcement of colors and pattern recognition skills and creativity areas for doodling and musical exploration.

Preschool Success Starter (Broderbund):
Price: $29.95 Mac/Win CD-ROM
This 2 CD set helps children ages 3-5 explore letters, numbers, shapes, music, and more. Maggie's Farmyard Adventure

(continued on page 18)

THE AMERICAN GIRLS PREMIERE

by Pamela J. Haggerty

SUBJECT AREA: Creative Arts/Language Arts/American History

PUBLISHER: The Learning Company
(800)685-6322
www.learningco.com

COST: $34.99

INTENDED AUDIENCE: Girls ages 7-12

NOTABLE HARDWARE REQUIREMENTS:
Mac: Double-speed CD-ROM drive, LCIII or higher, System 7.1 or higher, 8mb RAM.
Win: 486 or higher, Windows 3.1 or higher.
Both: 256-color display (13" or larger monitor), optional printer, microphone – optional but highly recommended.

EDUCATIONAL GOALS: To explore theater, writing and U.S. history.

DESCRIPTION: The *American Girls Premiere* software is part of the American Girls Collection which includes books, dolls and accessories based on five young female characters from five different periods of U.S. history: Felicity, Colonial America; Kirsten, Pioneer America; Addy, Civil War America; Samantha, America's New Century, and Molly, World War II. In addition to the five main characters, there are 45 historical costumes, 55 co-stars, 16 actions and emotions per character, 60 scenes, 125 historical props, 250 musical selections and over 250 lighting and sound effects.

Students can create, direct and perform plays centered on each of the five main characters. They can choose the main characters, minor characters, sets, props, sound effects, and lighting, and they can write dialog and direct their characters' movements. Students can either recreate their favorite American Girls stories or create stories from their own imagination.

STRENGTHS: *The American Girls Premiere* provides a fun and interesting way to practice the writing skills learned in school, such as grammar, word choice, story sequence and story structure. Students who enjoy reading the books and playing with the dolls from the American Girls Collection should find this program fun and interesting because they can recreate, expand or change the plots from the books.

The many choices that are available will spark interest and creativity. The graphics and sound effects are of high quality. Two exciting features are that students can record their own voices (if their computer is equipped with a microphone) and can print out scripts and playbills.

For students who are having trouble coming up with ideas for plays, there are 21 text-based play starters in the User's Manual.

The American Girls

Addy - a proud, courageous girl determined to be free in the midst of the Civil War
Felicity - a spirited colonial girl full of energy and independence
Molly - a lively schemer and dreamer who grew up on the homefront during WWII
Kirsten - a pioneer girl of strength and spirit who settled the frontier
Samantha - a bright Victorian girl raised by her wealthy grandmother

A Director's Guide on Disk 1 `provides students with interesting facts and background information regarding theater and U.S. history. The "Behind the Scenes" section gives a first-hand view of the making of *The American Girls Premiere*, starting from what it was like to be an actor playing an American Girl to the processes the artist used to create the sets and props. The Director's Tips section gives professional advice on creating plays, and the glossary defines words related to the theater. In the Director's Guide, students can also find out more information about each American Girl. Finally, on Disk 1 there are beginning and advanced tutorials that provide answers to almost any question about the program.

WEAKNESSES: Although the many choices offered will be fun and interesting to many children, it might be daunting for younger children and those with learning disabilities. The reading level of the Director's Guide is geared towards upper elementary school children. In order to master the program, students must be willing to spend the time to learn and practice the features. For example, one 12-year-old girl became frustrated when she could not coordinate a character's actions and lines the first few times she tried. After several attempts, she succeeded.

SUMMARY: The American Girls Collection is very popular among girls ages 7 to 12. *The American Girls Premiere* should certainly inspire interest and excitement among girls already fascinated by the collection. The many features of the program will hold the interest of students and keep them challenged for a long time. Although the program has many sophisticated features, younger students and students with learning disabilities could still enjoy the program on a smaller scale. They could start off by selecting different characters, scenes and props. Character dialogue and actions could come later. This program will also be helpful for students with learning disabilities who have difficulty visualizing history.

Pamela Haggerty is a graduate student in the Department of Special Education at The College of New Jersey.

EUROPE INSPIRER

by Marta Isaacson

SUBJECT AREA: Geography

PUBLISHER: Tom Snyder Productions
(800)342-0236
www.teachtsp.com

COST: $99.95, single copy; prices from $199.95 for a 5-Computer lab pack to $599.95 for a site license.

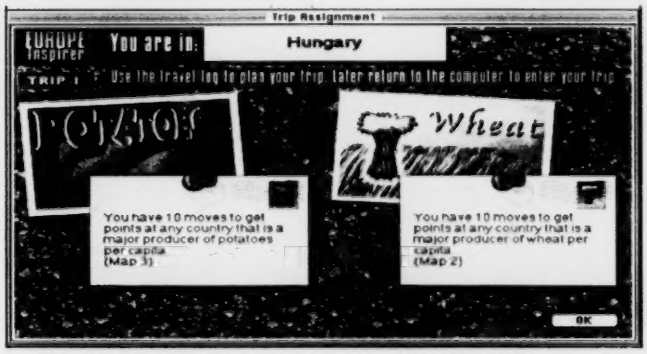
INTENDED AUDIENCE: Grades 4 - 12

NOTABLE HARDWARE REQUIREMENTS:
Mac: System 7.1 or higher, 68030 processor or higher, 8 MB RAM.
Win: Windows, 486 processor or higher, 8 MB RAM.

EDUCATIONAL GOAL: To gain geographic information and develop collaborative teamwork skills.

DESCRIPTION: *Europe Inspirer* is one of four titles available in the Inspirer Geography Series. The other three titles focus on the United States, the World and Africa.

Each game consists of a trip comprising ten stops in different European countries where the students can gather that country's resources in order to earn points. For example, one trip might require the students to visit, in ten moves, as many countries as possible that have fishing as a major industry. The next trip may entail looking for lumber, produce, or population density and energy resources. To start, the teacher distributes a Travel Log and a set of maps. The students keep written track of their moves in the Log. The maps list the location of the resources to be found and their point equivalents. The game can be played in three modes: whole class, multi-team rotation (with up to seven different teams), and single team.


Trip Assignment
EUROPE Inspirer
You are in:
Hungary
TRIP 1
Use the travel log to plan your trip. Later return to the computer to enter your trip.
Potatoes
Wheat
You have 10 moves to get points at any country that is a major producer of potatoes per capita. (Map 3)
You have 10 moves to get points at any country that is a major producer of wheat per capita. (Map 2)
OK

Students are asked to search for two resources simultaneously in the Level 2 sample game.

The game can be played in three levels which are distinguished by their degree of difficulty. Level One, recommended for Grade 4, asks the student to find only one resource and promotes map reading skills and cooperative learning. While playing together, the students develop shared goals and learn to research and organize information. Level Two, for Grades 5 and 6, has two resources to search for simultaneously. Here, students need to plan their trips, weighing the point values earned, per country visited. The students also gain skills in delegating responsibilities and exchanging information. Level Three, for Grades 6 and up, adds more strategic planning by asking the group to end their trip in a country which has a specific resource.

STRENGTHS: This game is entertaining while teaching the location of European countries and their major resources. Custom Categories can be created to incorporate a teacher's own data into the game. Suggested lesson plans are included. While the program inspires cooperative learning, competition between teams can also be encouraged. Directions are fairly simple, and the screen layout is easily maneuverable.

In this sample screen, the students have completed two moves in their search for countries that have wheat as a major resource.

WEAKNESSES: *Europe Inspirer* contains no moving graphics or animation. While the program meets its intended goals, the lack of an interactive screen misses an opportunity to provide a more in-depth cultural picture of each country. National anthems or other ethnic symbols might enhance the students' feel for each country's individuality. For students with reading problems, a nice addition to the program would be a feature to pronounce the names of the countries.

SUMMARY: *Europe Inspirer* is an enjoyable and novel way for students to become familiar with European countries and their natural resources. By providing the opportunity to work in teams, the game does a nice job of teaching students to work cooperatively. *Europe Inspirer* is an excellent tool to explore European geography in an entertaining and challenging fashion.

Marta Isaacson is a graduate student in the Department of Special Education at The College of New Jersey.

MATHPAD

by Dan Daly

SUBJECT AREA: Arithmetic computation

PUBLISHER: IntelliTools, Inc.
(800)899-6687
http://www.intellitools.com

COST: $79.95

NOTABLE SYSTEM REQUIREMENTS: Mac only, System 7.0 or higher, 4 MB of RAM, and at least a 14" monitor.

DESCRIPTION: *MathPad* is a program for learning and practicing all the basic operations of arithmetic. It is aimed at students who cannot write at all or who cannot write in the neatly aligned columns of numbers necessary for accurate and efficient computation. IntelliTools provides interfaces to use *MathPad* with the *IntelliKeys* for students who need an assistive device to use the computer. However, *MathPad* can also be operated from the standard keyboard and mouse. This reviewer is familiar with its use by a student who can type and use the mouse, but who cannot write because of problems with spatio-motor coordination.

Arithmetic problems can be loaded into *MathPad* very quickly. The teacher or even the student can enter the problems in single line format (e.g., 4562/27), and the problem will appear on the screen in vertical format. The student then moves the cursor to the first entry point in the problem and clicks to bring up a small entry box in which the student enters the required digit. The cursor can be positioned by using the mouse, the arrow keys on the keyboard, or arrow keys on the screen.

Other features that can be turned on at the user's option are speech output and auto-navigation. The user can choose to have the program speak each number as it is entered, each operation as it is requested, and/or the entire problem. With auto-navigation, the input box will move to the next logical entry location as each digit is entered. Beginners usually benefit from auto-navigation, but as skills increase, it should be turned off. One of the benefits of *MathPad* is that the student must do everything that would be necessary to solve an arithmetic problem on paper. The student does not just enter digits. Rather, the student must first select the location where a number is to be entered, or the location where a carry or a borrow needs to be inserted, and only then enters the number.

STRENGTHS: The outstanding feature of *MathPad* is its ease of use. The student can enter the intermediate calculations and the final answer just about as fast as someone working with pencil and paper. Most importantly, the student must make all the decisions. The computer does not help with anything except the accurate placement of the numbers in the problem space. At the student's request, a box will be provided above the numbers for regrouping (carrying and borrowing digits). The computer provides no answers to the problems. However, it will mark problems on the Problem List as being correct, incorrect or not done. Another example of ease of use that the teacher will appreciate is the simple linear entry of problems as described above. These can be quickly typed into the Problem List window. Problems can also be imported from text files generated by various word processing programs.

WEAKNESSES: The carry and borrow operations can sometimes be confusing — especially when doing an extended borrow over several decimal places. However, most students should get the hang of it after a little practice.

SUMMARY: *MathPad* is a very elegant solution to the problem of teaching arithmetic to students who are unable to write. It enables the student to do the problem in exactly the same way as his or her classmates do it in their workbooks. It is efficient for the teacher, who does not need to do any complicated computer entries to create the problem lists, and it is extremely helpful for the student who has difficulty with the mechanics of handwriting. Students can get a lot of practice doing required arithmetic problems with this easy-to-use, cost-effective software program.

Dan Daly is an engineer at Bellcore and the parent of a child with a disability.

EDITOR'S SOFTWARE PICKS

(continued from page 15)

takes children on a musical adventure to discover and develop early reading, music and mouse control skills. Eager's Pet Show addresses letters, counting, shapes, colors, and patterns while the children stage an exciting pet show. Multiple skill levels of play make this a versatile program.

Reader Rabbit's Toddler (The Learning Company):
Price: $29.95 Mac/Win CD-ROM
For ages 2-4. this program has enchanting activites to capture and hold the attention of toddlers. No mouse clicks are required, and the activities encourage hand-eye coordination and promote learning in the areas of counting, colors, shapes, and the alphabet. It's hard to resist Reader Rabbit singing and providing hand motions to popular children's songs like the Eensy Weensy Spider and I'm A Little Teapot.

Sunbuddy Math Playhouse (Sunburst):
Price: $79.95 Mac or Win CD-ROM: lab packs available
For grades K-3, an onstage performance by the fun-loving Sunbuddies characters uses Grimm's Bremen Town Musicians to present a read-along production with math-related animations hidden in each scene. Backstage, four interactive math activities reinforce basic addition and subtraction facts, strengthen memory and problem-solving skills, and enhance visual discrimination and map reading abilities. Each activity has three difficulty levels.

I recommend the following program/product for consideration for inclusion in a future issue of TECH-NJ: Part A

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Brief Description: _____

_____

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School/Company: _____

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The College of New Jersey
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Ewing, New Jersey 08628-0718

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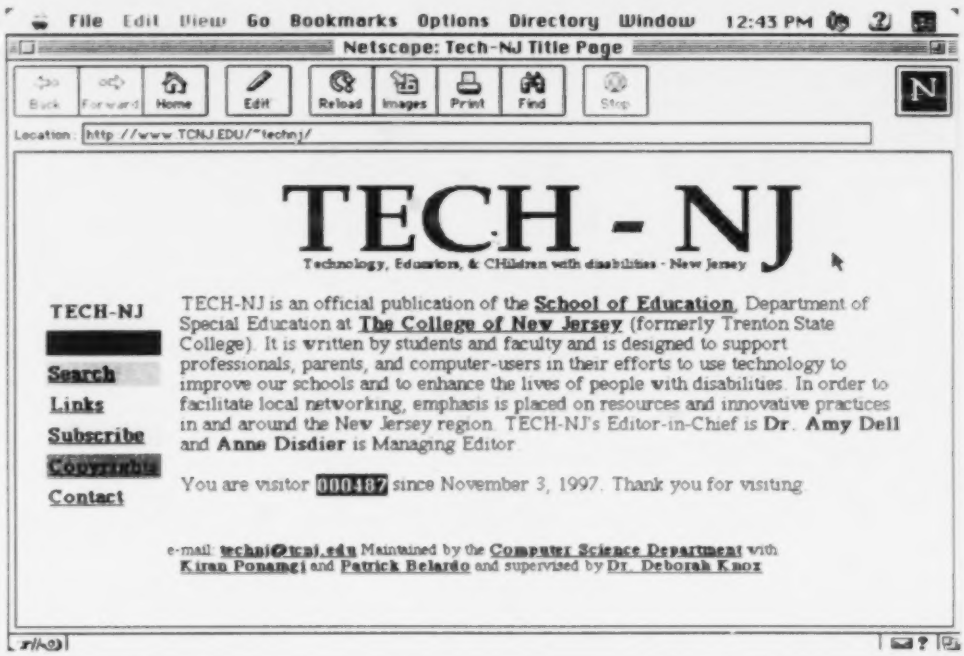
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TECH-NJ is an official publication of the School of Education, Department of Special Education at The College of New Jersey (formerly Trenton State College). It is written by students and faculty and is designed to support professionals, parents, and computer-users in their efforts to use technology to improve our schools and to enhance the lives of people with disabilities. In order to facilitate local networking, emphasis is placed on resources and innovative practices in and around the New Jersey region. TECH-NJ's Editor-in-Chief is Dr. Amy Dell and Anne Disdier is Managing Editor.
You are visitor 000487 since November 3, 1997. Thank you for visiting.
e-mail: techni@tcnj.edu Maintained by the Computer Science Department with Kiran Ponamgi and Patrick Belardo and supervised by Dr. Deborah Knox

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Technology, Educators, & CHildren with disabilities - New Jersey

The College of New Jersey School of Education
Department of Special Education

Fall 1998, Vol. 10 No. 1

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REFORMING TEACHER EDUCATION TO FOSTER INCLUSION

by Amy G. Dell

Although New Jersey was one of the early leaders in providing an education to children with disabilities, its record in recent years has been less than laudatory, particularly in the area of providing an appropriate education in the least restrictive environment. The state ranks near the bottom on all measures of segregation of children with disabilities, and parents around the state are repeatedly frustrated in their efforts to find supported inclusive education settings for their children. There are several factors contributing to this, but a major part of the problem is clearly a lack of preparation on the part of professionals, specifically:

- regular educators to teach children with disabilities in their classrooms;
- special educators to serve as consultants to and as team members with regular classroom teachers;
- administrators to support inclusion practices by establishing an inclu sive and collaborative climate in their schools.

The New Jersey Developmental Disabilities Council has been very concerned about this lack of opportunity for children with disabilities and has published an oft-quoted monograph called *Separate and Unequal* (1994). This year they decided to focus their efforts on teacher preparation and solicited proposals for a funded project to 1) conduct research on how teacher education programs can support inclusion and 2) develop a model teacher education curriculum. It is with great pleasure that the **TECH-NJ** editors announce that the School of Education at The College of New Jersey has been awarded this important grant.

A salient feature of the Teacher Education for Inclusion Project at TCNJ is ongoing collaboration between professors in both special education and regular education. From its inception, the project was jointly designed by faculty from both disciplines, and all efforts towards curriculum reform will involve both departments. This kind of ongoing collaboration is essential to the success of both inclusion at the local level and curriculum reform in higher education. Amy Dell from the Department of Special Education and Ellen Frede from the Department of Elementary/Early Childhood are project co-directors; in addition, Connie Titone from Secondary Education will be joining the project this winter. Anne Disdier, Managing Editor of **TECH-NJ**, and Orah Raia, a parent of a child who is included, are the project's research associates.

A salient feature of the Teacher Education for Inclusion Project at TCNJ is ongoing collaboration between faculty in both special education and regular education.

After gathering research on the national picture, project staff will be convening several focus groups locally to determine the kinds of skills New Jerseyans believe their teachers need for inclusion to be successful. The focus groups will represent the diverse constituencies who have a stake in inclusive education, including **faculty** from colleges and universities who teach in teacher preparation programs - both special and regular education;

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THE COLLEGE OF NEW JERSEY

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TECH-NJ:
Technology, Educators, & CHildren with disabilities-NJ

TECH-NJ is an official publication of the School of Education, Department of Special Education at The College of New Jersey. It is written by students and faculty and is designed to support professionals, parents, and computer-users in their efforts to use technology to improve our schools and to enhance the lives of people with disabilities. In order to facilitate local networking, emphasis is placed on resources and innovative practices in and around the New Jersey region.

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TECH-NJ

Technology, Educators, & CHildren with disabilities - New Jersey

Volume 10, Number 1

EDITORIAL

Teacher Training More Essential Than Ever

With national attention finally focusing on education, 1998 will hopefully live in memory, not as the year of Monica vs. the President, but as the year teacher preparation was finally recognized as an essential component of any and all kinds of educational reform. If our schools are to be improved, if student outcomes are to be enhanced, if technology is to be used to enrich the curriculum, then practicing teachers must be retrained and new teachers must be appropriately prepared. The federal budget which Congress approved in the fall provides over $150 million for teacher training activities. This allocation is a compelling message that in 1999 as far as teacher training is concerned, "attention must be paid."

TECH-NJ readers who have been involved in educational technology already know how important teacher training is. Passionate computer-users can never get enough training. And through experience, they know that becoming a skilled computer-using teacher requires a special kind of training. Listening to a three-hour presentation, no matter how good the presenter, does not do it, nor does watching someone demonstrate a particular piece of technology. Teachers need opportunities for hands-on training - i.e., workshops which build specific technology skills by providing in depth training on the equipment which will actually be used in the classroom.

To this end, **TECH-NJ** is in the process of preparing a series of hands-on workshops which we hope to offer at sites around the state during the spring of 1999. The topics to be addressed in these skill building workshops will likely be the following:

Computers: An Essential Writing Tool for Students with Learning Disabilities
Enhancing the Teaching of Reading with Computers
Exploring the World Wide Web: The Internet for Special Education Teachers
Assistive Technology in the IEP
Creating Custom Overlays and Activities for IntelliKeys
Selecting Software which Matches the Curriculum
Integrating Computers into the Preschool Curriculum: Software Considerations
Integrating Computers into the Preschool Curriculum: Access Considerations

Please look for the flyer announcing these workshops and share them with as many teachers and therapists as you can. As professionals become comfortable with assistive technology and knowledgeable about how to integrate it into the curriculum, we will definitely see positive changes in the technology opportunities provided to New Jersey's students with disabilities.

USER PROFILES

TECHNOLOGY IN TWO PROFESSIONALS' LIVES

by Theresa R. Lupo

I arrived in Manhattan and began my journey from the Port Authority bus terminal to the Upper West Side among a throng of New Yorkers indifferent to traffic signals. Several blocks of pretzel vendors, yellow cabs, smiling doormen and skyscrapers later, I arrived at the Levy family apartment. There, I met Chava, who was sitting at her desk in front of the computer eating lunch between sentences.

Chava Willig Levy is an author, lecturer, and communications consultant who uses a motorized wheelchair. "I basically do all kinds of writing and editorial work for my firm. At *Lucidity Unlimited*, communication with uncommon clarity is the goal," she explained. "People often have an important message, but they don't have the talent to make the words shine, so they come to me for resumes, brochures, speeches and manuscripts."

A Professional Writer and Lecturer

Sometimes jobs fall into Chava's lap. While attending the National Council on Independent Living's annual conference in Washington, D.C., she met an editor from the University of Kansas who needed someone to write a history of the independent living movement. "The assignment paid very little," Chava recalled, "but I got to interview Ed Roberts, the 'father of the independent living movement.' He fought to attend Berkeley in an iron lung, founded the Center for Independent Living in Berkeley, and later ran California's Division for Vocational Rehabilitation, an agency that had opposed his college education!" (For an excerpt from this piece, see http://www.eskimo.com/~dempt/edrobert.htm).

Chava's work has been featured in a number of magazines including *Family Circle, Parents Magazine, Woman's Day* and *McCall's*. In 1990, she won the EDI Media Award for an article she wrote about her quest for parenthood. For a taste of her work, you can visit her homepage at: http://ourworld.compuserve.com/homepages/Susieq/cwl.htm.

Chava enjoys lecturing on a variety of topics, including parenting, spiritual issues and disabilities. She recently returned from a speaking engagement in Atlanta. "Often the subject doesn't relate to disability, though even if it doesn't, somehow it shatters stereotypes." Chava has post-polio syndrome. Her husband, Michael, is blind.

Educational Challenges

From the time she was 9 years old, Chava was in and out of the hospital. She was then placed on a waiting list and eventually attended a segregated classroom. Students of mixed grades and academic levels spent the entire day in one room. "Even though the cafeteria was on the same floor as our classroom, we never mixed with the other children," she recalled. Chava attended a regular school for the first time in 9th grade.

Chava met with some resistance when she applied for college. Although she was accepted to the college of her choice, Yeshiva University's Stern College for Women, the administration was concerned about how she would get around. She recalled, "They told me, 'There are steps here and it would be hard to get to class.' When I graduated summa cum laude, with a B.A. in French literature, the registrar confessed that their fears had been unfounded." Chava went on to attend graduate school at Columbia University, where she received her M.A. in rehabilitation counseling and pursued doctoral studies in counseling psychology.

Computer Technology and Adaptations for Writing

For writing, Chava uses *WordPerfect* on her Pentium 120. She explained that in order to type, she braces her right arm with her left hand and her muscles really get a workout. She also uses *DragonDictate* (Dragon Systems, Inc.), a speech recognition program, though not on a daily basis. "There are a few drawbacks," she explained, "If someone nearby is talking, like my kids, the computer thinks I'm talking and will type the weirdest things. Even a bang on the cabinet will produce a strange word. If I am writing something that I don't want everyone else to hear, that's a problem. If I want to work late at night when my husband is sleeping, it might disturb him." She continued, "I'm still getting the hang of it. To make a capital letter, you say, 'shift key,' then the next word should have a capital. If it is a name, it might make it a capital, though it might not recognize the name and type something else. It does have a word prediction program, and if you are lucky, the word you want is on that list. If not, you have to go into Spell Mode. In Spell Mode, each letter is represented by a word that represents the letter sound, for example, Alpha = A, Beta = B, and Charlie = C. Sometimes I forget the correct words and try other ones, which can be pretty funny."

Palmtop for Organizing

To keep track of her busy schedule, Chava uses a palmtop computer called a *Psion* (Psion PLC). The *Psion* is about the size of a checkbook and has a QWERTY keyboard with a fold-down screen. It contains an address book, a world map with an area code directory, a calculator and a spread sheet program. (It also has a map of the world on which you can enter any city and find the current time, as well as the time that the sun will rise and set that day and the distance between any two cities.) "It has a data base which I can search by simply typing 3 letters. For example, I'm really into music, so if I have an extra ticket to a concert, I can type 'm-u-s,' and I get my upstairs neighbor, who a music teacher, and a list of other music lovers. The *Psion* never leaves my side. If I get an idea at 2 a.m., it's right by my pillow and I can write it down.

Environmental Control System

The Levys also use an environmental control system called *Plug'n'Power*

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BEST COPY AVAILABLE

PROFESSIONAL LIVES

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which is available from Radio Shack. The controls, which are about the size of bottle caps, are attached to light switches and outlets. "There is no fancy wiring. As long as no one else in the apartment building has one with the same numbers it is fine, although sometimes our lights go on and off mysteriously. You can also set the timer on the clock if you want something on or off at a certain time." Chava can turn lights, a fan, and a humidifer on and off at the touch of a button. "It's a God-send. I like to read late into the night. Fortunately, the light doesn't bother my husband, an early-to bed person. Before we got *Plug'n'Power*, I'd have to wake Michael to shut the lights when I was ready to call it a night. Now I don't have to."

"We really don't have all that much sophisticated technology," Chava added. "We have a hydraulic lift to get me in and out of the tub. We have a remote control for the TV and VCR, like 99% of the American population. On the microwave we have raised dots on the keypad to allow Michael to use it."

As we spoke, Chava called her husband at work to discuss dinner plans. Using the speaker phone, she simply said, "Abba," (the Hebrew word for Daddy) and *Voice Dial*, available for a small monthly fee from Bell Atlantic, placed the call. A similar feature, *Talk Dial* is available for Bell Atlantic cell phones.

Navigating in New York City

Chava's husband, Michael, is the Director of Travel Training at the Metropolitan Transit Authority, New York City. Through outreach, training, literature, and special projects, he promotes bus and subway use by people with disabilities. Chava remarked, "The city provides autonomy that you just can't get in the suburbs. Neither I nor my husband can drive, so the bus has changed things dramatically. Almost all buses have wheelchair lifts in back. There is a bus stop right outside my door so I can go anywhere - cross town, down town. Some subway stations are accessible too, though most are not."

Computer Adaptations in an Office Environment

Michael, who is blind, uses a Dell 286 computer for his writing, particularly his diary, word processing, poetry, e-mail, and stories for his children. He also uses it for memos, flyers and other documents at work. "It is a real gift. I grew up on a manual typewriter, and if I lost my place, I had to bother someone to tell me where I left off," he explained. He uses a *Braillemate* (Blazie Engineering) for typing notes.

He continued, "Something has to be said about the essential nature of my technology, which would probably be true in any office position. I will give you an example by describing what I did today during a half-day of work:"

"I am having a regional travel training workshop on November 6 for transit properties from New Jersey, Connecticut, and Pennsylvania. My boss, who is sighted, wanted the agenda finished today. She came over to my desk, and I turned on the screen so she could see the agenda. We started moving things around on the page, to get it centered and spaced properly. Then since we didn't have any correspondence from one company in response to our invitation to this workshop, I checked my September file on my computer and was able to follow up with a phone call."

"Then, I received a fax from California." Mr. Levy uses a scanner with *OsCaR*, optical character recognition software (TeleSensory S_stems, Inc.) to read printed material. He also uses a *Vert Plus* (TeleSensory Systems, Inc) speech synthesized screen reader. "Unfortunately, I bought a unit to run off a laptop, rather than buying one of those self-contained 'reading machines.' My office decided that the laptop could easily 'walk away' and locked it in a filing cabinet, so every time I want to use the scanner, I have to reconnect all the components. This is not a complaint. It is meant to show that technology always comes with strings attached, i.e., with a human interface and an environmental interface."

"The best device for reading printed material is still a human being, a reader. The Lighthouse, Inc. has off-site reader services. Translated to English, this means a nice lady named Marie comes to my office once a week and reads for a couple of hours. Together, we can 'skim,' which is something no machine will ever be able to do. I can say to her, 'look at this periodical, and see if there are any articles that mention travel training, or disability."

"Next, I have three bus demonstrations coming up in November. I had to speak with both the Department of Buses and the special education teacher who is coordinating the demonstrations. I checked my general file for certain details (dates, locations, number of students) about the upcoming demonstrations. Without a computer, I would have to maintain cumbersome hard-copy files, and would certainly not have a 'search' feature to find key words that would bring me right to the information I needed. With computer files, I resemble my sighted co-workers. On the other hand, I don't have the luxury of looking in their files if I need information, so I have to be careful to keep on my computer any bits of information I need."

"One of my successes on the job is networking with professionals. I have a list of 250 agencies and over 500 contacts developed over my four years on the job. How is the list modified and updated? Through a computer file, of course. My intern's job this summer was to call every agency on the list and get updated information."

Take a Cautious and Informed Approach

Michael added, "In my zeal concerning technology, it is tempting to say that knowledge of adaptive equipment is as vital as knowledge of the effects of a particular disability. You also have to know how to play the 'vendor game,' so that you don't get ripped off by people who call themselves experts but are just trying to sell you products. So you see, it isn't just technology. It's educators like you getting it into the hands of students when and where they need it. Ensuring compatibility with existing technology

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AUGCOMM SYSTEM PROVIDES A VOICE FOR A YOUNG CHILD WITH AUTISM

by Cynthia Bott

Andrew is an energetic 5 year old with autism who loves Mother Goose, singing any Disney song, and kisses. He attends a private school designed for students with autism. As coordinator of the early childhood program, I see Andrew on a daily basis and have the opportunity to observe his interactions with his peers and teachers.

Andrew does not speak. He does make efforts at sign language and verbal approximations, but only upon request and rarely spontaneously. Andrew is agile and has excellent fine motor control. Cognitively, he exhibits splinter skills in academic areas. He has a list of over 100 sight words that he can identify, and he can sequence numbers past 25, yet he cannot retrieve objects by name or understand the simplest abstract concept. Andrew also has great difficulty sitting still for longer than three seconds at a time, making it even harder for his teachers to assess his knowledge.

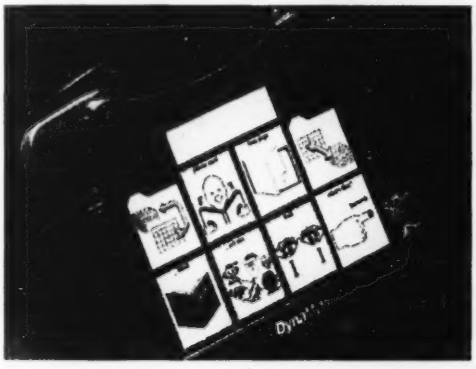
Picture Exchange: Andrew's First System

Last year Andrew's family purchased an augmentative system to aid his communication. Prior to this, he had been using a Picture Exchange Communication System with about 50 computer-generated pictures representing Andrew's most common needs and wants. While this helped alleviate some of Andrew's frustration, it did not provide him with a voice, and it also became difficult to include all of his increasing needs. At a language seminar, his parents became introduced to a high-tech system called the *DynaMyte* (Sentient Systems Technology), a small, hand-held unit which they purchased with help from their insurance company.

The *DynaMyte*

Andrew's *DynaMyte* was the first that I had ever seen of this model, and it is truly amazing what it has done for him. It is a square, gray box, about 7 inches on each side, and 2 inches deep. It has a touch screen, with a protective, plastic lid that flaps open and shut. Andrew's parents had a customized carrying case designed with padding and a longer strap than originally supplied to protect it from accidentally being dropped. This enables Andrew to carry around the system himself, without his teachers and parents fearful of any damage he might do.

The *DynaMyte* has a memory card installed, and it is simply programmed to meet individual needs. The speech therapist and Andrew's mother attended a special training session to enable them to program his system and troubleshoot any problems that may arise. When looking at the touch screen, one sees three rows containing icons of folders (four in each row). Each folder represents a different category, which when touched changes the screen to a specific overlay of pictures/ letters/words appropriate to that category.



There is a blank bar across the top of that overlay, and when Andrew presses the icons he wants, they appear in that bar in the order they are pressed. When his sentence is complete, Andrew needs to touch that bar, and the system reads aloud the entire sentence.

For example, if Andrew wants to ask for a pretzel, he touches the food folder on the master page. This calls up the food page, with an assortment of phrases and food symbols pictured on cells. He then can touch the "I want" "pretzel" "please" cells and they will appear in the bar that runs across the top of the food page. Then, with a touch on that bar, the *DynaMyte* reads the sentence in its entirety. The memory card installed in the system has an extensive vocabulary, and if a word is programmed in that the computer does not recognize, it will read it phonetically. All the programs that Andrew needs are contained within the system – no additional hardware or software is needed, just the ability to set-up each folder so that it contains individualized items.

Andrew's Vocabulary

Currently, Andrew has several folders programmed into his system that enable him to communicate his needs both at home and at school. His pages include: food, drinks, school (with circle time vocabulary, early learning concepts, etc.), music (with a "sing me" cell and various song titles), reinforcer items (videos, computer game titles), letters (arranged in a "qwerty" keyboard format), and home (family names, book and movie titles, etc.). Prior to receiving the system, he was evaluated for his ability to move from the master page through several different folders. Andrew's success at that time was incredible, and to see him currently move from page to page with no difficulty finding what he desires is amazing.

Andrew Now Expresses His Preferences

The *DynaMyte* goes with Andrew everywhere. At home, he apparently takes it to bed. The system has become his voice, and he truly understands that concept. At school, it sits on his desk within reach, or next to him during group activities. His spontaneous language has increased dramatically, since now he knows people understand what he is requesting – his family often hear the voice asking for items throughout the house without any questions having been asked. It has been eye-opening to his

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PROGRAM PROFILE

SOFTWARE PROGRAMS FOR SPEECH THERAPY

by Orah Raia

Francine Kartzman had been a speech pathologist for 30 years and never thought that computers had a place in speech therapy, until she attended the Enhancing Teaching and Learning with Computers and Assistive Technology conference in May 1997, sponsored by the New Jersey Department of Education, TECH-NJ at The College of New Jersey, and NJ TARP. Mrs. Kartzman was so inspired by what she learned at the conference that she made the decision to return to school to learn more about technology. In fact, in January 1998 she enrolled in a master's level course entitled Assistive Technology offered by the Department of Special Education at The College of New Jersey.

Adapting Software to Meet Special Needs

Mrs. Kartzman works for the Highland Park School District, known for its philosophy of inclusion of students with disabilities in regular classrooms in neighborhood schools. When she returned from the conference in May 1997, she decided to turn on the Power Mac computer in her room and began to experiment with the preloaded software that came with the Mac. I observed her nine months later on a typical morning during which a number of students, all with different needs, came to her room for speech therapy.

Mrs. Kartzman used a very common application, *Simple Text*, with her first group of students. They were capable of reading but had very poor comprehension. The students were each given a set of three picture cards and were asked to compose three sentences related to the pictures. She typed their sentences into a *Simple Text* document. She then took advantage of *Simple Text's* recording feature and had each student record their sentences into the computer. Afterwards, she played back the sentences. The students were delighted to hear their sentences read aloud in their own voices. This activity provided both visual and auditory feedback of their work. She then printed out their sentences so they could take them home to practice.

Mrs. Kartzman likes to use the Living Books series by Broderbund with students because the programs are entertaining and provide excellent opportunities for expressive language.

The next group of students had very limited expressive language. Mrs. Kartzman likes to use the Living Books series by Broderbund with them because the programs are entertaining and provide excellent opportunities for expressive language. The series contains children's literature titles such as *Just Grandma & Me*, *The Berenstain Bears Get in a Fight*, *Arthur's Teacher Trouble*, and *The Cat in the Hat*. Each page of the story is read aloud by the computer, and the individual words are highlighted as they are read. In addition, each page contains a number of "hot spots," which when clicked, perform surprising animations. For example, a tree may come alive and dance or sing when clicked. I observed students working with *Stellaluna*. With each page, Mrs. Kartzman asked the children which objects to click. They would instinctively use their finger to point to the object, but she would remind them to use their voices instead. In this way, the children were provided with many opportunities to use expressive language for a purpose. She asked many open-ended questions about what they were seeing on the screen in order to provide them with opportunities to answer in complete sentences.

For younger students Mrs. Kartzman used Edmark's *Bailey's Book House* and *Millie's Math House* to enhance language while teaching early learning concepts. She recommends the program *My House* by Laureate Learning Systems for teaching functional vocabulary about common items found around the house.

In another instance, Mrs. Kartzman used the Living Books series with a young boy who has multiple disabilities. She commented that before she started using the computer with him, he could not pay attention for longer than three minute intervals. With *Just Grandma and Me*, Mrs. Kartzman was able to hold his attention to the page on the screen while he waited for his favorite page, the one with the hot dog. He mimicked all the characters and knew what was coming up before the next page was turned. I asked her how many times he had seen this program, expecting her to tell me over a dozen times. It had only been 2-3 times! He was able to sit through 15 minutes, all the while sitting closely to the screen, mesmerized by the pictures and sounds, grinning from ear to ear.

Davidson's *Magic Tale Series* has worked well for fourth graders who are studying Ellis Island. These multicultural tales from Russia, Japan, Africa, Ireland, Italy, and Native America stress universal virtues of kindness, sharing, courage and generosity, and they blend well with this unit lesson. She also works collaboratively with the fourth grade teacher using the program, *If Your Name Was Changed at Ellis Island* (Scholastic).

Special Software

Another application Mrs. Kartzman recommends is *Co:Writer* by Don Johnston Incorporated. *Co:Writer* is a word prediction program designed for students who struggle with writing due to language delay, learning disabilities or physical disabilities. As students type the first letter of a word, a numbered list of words is displayed on the screen. If the correct word is displayed, the student just types in its corresponding number, and the word appears in the typed sentence. Students' typing ability and speed is enhanced, so their efforts are focused on generating the sentence rather than on the mechanics of typing. The speech output feature of *Co:Writer* helps students who have reading difficulties or visual perceptual problems.

Mrs. Kartzman is eagerly looking forward to learning more about the

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PARENT'S PERSPECTIVE

COMPUTERS MOTIVATE STUDENTS WHO HAVE LEARNING DISABILITIES AND ATTENTION DEFICITS

by Margaret Perry

Bryan is a typical 13-year-old. He is kind, warm hearted and one of the most level headed teenagers I know. He has a wonderful sense of humor. Bryan enjoys playing and watching many different sports including swimming, baseball and hockey. His preferred sport right now is Nascar racing, where he roots for his favorite, #24 Jeff Gordon.

Bryan is the oldest of my four children and has recently taken on the responsibility of part-time babysitter for his younger siblings. He is employed as our local paper boy which provides him with a steady income. Weekends are spent either with friends at the movies or home playing with his siblings. He is currently a second class Boy Scout, having worked his way up from a Tiger Cub to a Webelos Scout, earning the Arrow of Light award. Bryan enjoys camping and learning new skills and hopes to make Eagle Scout in a few years. He has many talents, including the ability to draw well, the inquisitiveness to take things apart and rebuild them, and a very strong creative streak which he uses in every aspect of his life.

Learning Disabilities and ADD Create Problems

Bryan has some difficulties which are mainly confined to the academic area. He is classified as perceptually impaired and has been diagnosed with Attention Deficit Disorder (without hyperactivity). His disabilities affect him most in the areas of study skills, organization, memory, math and writing, which affects all the other academic areas. His handwriting has always been so messy that often he is unable to read it himself. He rarely uses cursive and has major difficulty with spacing and some letter formations.

Bryan is very aware of his disabilities and often gets frustrated by the amount of effort he needs to put into his studies. When he was younger he required a great deal of attention both at home and at school, to keep him focused and on task. As he has gotten older his ability to complete tasks has improved, but the amount of work required has increased. He often feels overwhelmed by the work and many times tries to avoid doing it altogether. His current placement is in a partial pull-out program in middle school. He receives resource room instruction for study skills, math, English and reading, and he is mainstreamed in regular social studies, science and related arts classes.

A Sister's Profile

Kaitlyn, 9-years-old, is my second oldest child. She is presently in fourth grade. Katie is a very bright, funny, and people-pleasing type child. She has a wonderful imagination and a terrific enthusiasm for trying new things. Katie is very talented in the area of athletics, especially swimming and softball. Currently she is a Tri-County Qualifying swimmer and has been a member of two separate relay teams that have set records at the YMCA and our local swim club. She also enjoys basketball and recently made the travel softball team. In addition to sports Katie plays the clarinet and is singing a short solo in her school show. She has been in scouts for the past five years. She enjoys camping, horseback riding, and all the trips and activities her troop organizes.

Like her older brother, Katie has academic difficulties, including trouble with study skills, handwriting, math, and organizational skills. Katie also has problems with phonics and decoding words, which has given her trouble in reading. She is classified as perceptually impaired and also has Attention Deficit Disorder (without hyperactivity). Katie's school work varies from day to day due to her impulsive nature to rush through things. Her handwriting skills are similar to Bryan's, but her attempts with cursive have been slightly more successful. Katie is currently placed in an in-class support classroom and is pulled out for basic skills math instruction.

Help from Technology

I introduced the computer as a tool for reinforcing and enhancing the areas in which Bryan and Katie have problems. I immediately started working with Katie and we found *Reader Rabbit's Interactive Reading Journey* (Learning Company) to be extremely helpful. She enjoyed working her way through the path on her own, and her phonic skills improved noticeably within a relatively short period of time.

The Computer Brings Success to the Writing Process

Recently the computer has given both children the ability to compose documents for school and pleasure which are relatively flawless. An example for Katie would be a book report which she did completely by herself on the computer. She used the *Incredible Writing Machine* (Broderbund), which is designed to inspire students to creatively write and draw by offering book making, drawing, journal writing, essay writing, poetry writing, storytelling and more. The spellchecking feature allows Katie to catch most of her errors and correct them on her own. She enjoys the independence of writing and composing using this program and frequently creates short stories for her own enjoyment. When Katie was younger she used to aspire to be a professional writer but as she got older the writing process became more difficult and she seemed to let go of her dream. Now that she is using the computer I see her imagination coming back to life. She is proud of her writing and loves to share her stories.

Bryan's previous use of the computer had been limited to playing games and surfing the Internet. The first time he himself used the computer as a tool for his school work was after seeing his sister using it. In the past Bryan would attempt to write his projects in long hand and then ask me to type them. Most often I would end up editing them as I was typing because his ability to compose was very weak. An example of one such project is a travel brochure which he wrote out completely by hand. I showed him how to

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PROFESSIONALS' LIVES

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used in schools and at work is a whole other chapter, in which the end-user has to take an active part."

For More Information:

DragonDictate
Dragon Systems, Inc.
(800)talk-typ or (617)965-5200
www.dragonsys.com

Psion
Psion PLC
(978)371-0310
www.psioninc.com

Plug 'n' Power
Radio Shack
(800)843-7422
www.radioshack.com

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Talk Dial
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OsCaR
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replaced by *Reading AdvantEdge*
(800)227-8418
www.telesensory.com

Vert Plus - no longer available
Telesensory
recommended replacement:
Jaws for Windows
Henter-Joyce
(800)336-5658
www.hj.com

ΔΔ

Theresa R. Lupo is an alumna of the graduate program in Special Education at The College of New Jersey.

MUSIC SOFTWARE

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Summary

Know what you have, what you need, what you can get, and what you will do with it. When you can answer these questions, you will be able to make wise software choices for your school that won't gather dust or make children cry or run away. The best learning takes place when students are engaged and having fun. Good music software choices and exciting computer-based activities can only enhance a strong music program.

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** This article is based on a presentation by the author at the New Jersey Music Educators Association Conference in East Brunswick, February 1998.*

Donna Williams is an alumna of the graduate program of the Department of Special Education at The College of New Jersey.

AUGCOMM

(continued from page 5)

teachers to realize that when they present Andrew with a choice of what they think he wants, and he turns around and voices a completely different opinion, they were wrong. For example, the teachers may try to reinforce Andrew's good behavior with a choice of pretzels or soda, and he will use his computer to say he wants to listen to music! Andrew has also demonstrated a hidden phonetic ability that we might not have discovered for some time had it not been for his letters page. When his computer was first being programmed and he did not have all the words in folders yet, he would go to his letters page and "spell" out words using phonics and invented spelling. This also made us realize just how much more he was absorbing from his reading programs than we had originally thought.

The one behavioral issue we are discovering about Andrew now that he has a voice is his desire to perseverate on various topics – usually his favorite videos or songs. He will either type in a title several times before hitting the speak bar (so his teacher will hear "Mother Goose" spoken five times in a row), or he will repeatedly ask for the same item over a long duration, ignoring all other pages on the system. While we are addressing this issue from a behavioral standpoint, we are, at the same time, glad that he now has the communication capabilities to do this!

Because Andrew's fine motor control is refined, he can use a clear point to touch each individual cell, and these cells are small in size. This will allow room for expansion of the system's vocabulary in the future. I would like to see Andrew become more involved in the community and use his system to communicate to people other than those in his immediate circle. As a 5-year-old with some behavioral issues that still need to be addressed, his access to the community is limited. His *DynaMyte*, however, is the first step to breaking down that barrier. He is less frustrated about communicating than before, and the system has a clear enough voice output that the general public will be able to understand his requests. Andrew is a different child because of his *DynaMyte*, and he will be able to go so much farther than many of his teachers ever realized.

For More Information:

DynaMyte
Sentient Systems Technology, Inc.
(888)697-7332
www.sentient-sys.com

Picture Exchange Communication System (PECS)
available from Mayer-Johnson Co.
(619)550-0084
www.mayer-johnson.com

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Cynthia Bott is a graduate student in the Department of Special Education at The College of New Jersey.

RESOURCES FOR CURRICULUM INTEGRATION

Online Resources

IntelliTools Activity Exchange
www.intellitools.com
Preview overlays and activities which have been custom designed using *Overlay Maker, IntelliPics, IntelliTalk,* and/or *ClickIt!* and download those that suit your needs. Activities are organized by tool, skill level, and curriculum area. Or send an activity you have created and receive a free piece of software if it is added to the Activity Exchange.

Website of the *Children's Software Revue*
www.childrenssoftware.com
Provides an excellent resource for comments and recommendations about children's software.

www.microweb.com/pepsite
The PEP Registry is a comprehensive listing of educational software companies, with direct links to their sites.

Publications

Assistive Technology in Special Education: Policy and Practice (1998)
by Diane Golden, Missouri Assistive Technology Project

Has Technology Been Considered? A Guide for IEP Teams
by A. C. Chambers, Wauwatosa School District, Wauwatosa, Wisconsin

Both published by the Council of Administrators of Special Education (CASE)
and the Technology and Media Division (TAM) of the Council for Exceptional Children (CEC)

Available from the Council of Administrators of Special Education
615 16th Street, NW
Albuquerque, NM 87104
(505)243-7622

Young Kids and Computers: A Parent's Survival Guide
A 96-page book from the editors of Children's Software Revue which provides information on selecting hardware and software, and lists over 700 software titles.

Everything You Need to Know (But Were Afraid to Ask Kids) About the Information Highway
Explains the Internet in non-technical language and provides information on the value of Internet access in schools and homes.

Both available from Computer Learning Foundation , P. O. Box 60967, Palo Alto, CA 94306-0967.
Box of 25: $62.50 plus $7 shipping.

Exceptional Parent Magazine
Software for Play and Active Early Learning: November 1998
Presents criteria for selecting software for children at the early childhood level and recommends programs that meet those criteria.

Content Software Makes the Grade: December 1998
Focuses on software for use in K-12 classrooms with students with disabilities.

ACCESSING THE ARTS

CHOOSING SOFTWARE FOR THE CLASSROOM MUSIC TEACHER

by Donna Williams

Everybody talks about how well music and computers go together. This is certainly true in the professional arena, but in education, the connection is less obvious. Professional music software is expensive and elaborate to use, and usually is out of the range of most school music programs.

I recently took a course on educational technology at The College of New Jersey and was pleased to find alternatives to expensive software written for professional musicians. I was delighted to discover the extent to which music and sound are integrated into many low-cost, children's software programs. With a little creativity, these programs can be used in music classes to engage children in the joy and discipline of musical invention.

Since there are so many programs on the market from which to choose, I thought it would be helpful to provide some pointers on how to select programs which match the music curriculum and how to organize a music class around computer-based activities. In the box you will find 10 programs which I have successfully used in music classes. Some I listed because they are neat or beautiful and full of color, sound, and music. Some will appeal to limited age spans, while others have enough intricacies for any age. They all provide highly engaging opportunities for children to experiment with music and sounds, listen critically, solve musical puzzles, explore art history, and/or experience musical composition.

What Should I Look For?

I chose the software titles in the accompanying box because they meet the following criteria:

Easy-to-Use: I prefer programs which do not require hours of time (my time or my students' time) to learn to use. Can my students access help easily or get suggestions if they don't know where to begin? Is there a "help" icon or "hint" buttons which explain how to perform a certain task? Can I give a group direction that everyone will be able to follow? Can a student with a physical disability use this program?

Low Frustration Producer: Do students get adequate time and multiple chances to work through a problem? Are gentle reminders provided? If the program is a game, do characters get killed or eliminated? Is there a way to start over without restarting the game?

Ease of Changing Preferences: Can preferences (difficulty levels, speed) be chosen without exiting the program? Do I need to memorize function keys and keystroke patterns, or can I just click on something?

Reading Issues: For my students who are non-readers or non-English readers, a program with little or no reading will facilitate their successful completion of activities. Poor, slow, or early readers, on the other hand, may benefit from a program that requires some reading. I look for programs that highlight words as a voice reads them, such as directions or background information, and allows the student to repeat the reading as needed.

Potential for Cross-Curricular Teaching: Does this music software incorporate information from other subject areas? Can I use this non-music program to teach a music lesson? Sometimes you don't want a program that is strictly music since art, gaming, history, critical thinking, and puzzle programs often incorporate music activities or obstacles, and at the least have theme songs, background music, and rich sound effects (Have you played *Myst* lately?!) On the other hand, we also need to advertise the way music in general and specifically music software can help students reach developmental milestones, master basic skills, use higher-level thinking, see events in historical contexts, generalize mathematical concepts, etc. No administrator in his/her right mind would call math and reading a "frill;" use *their* language to inform them why *they* need this software.

Quality Graphics and Animation: Any good chef will tell you, "If the food looks good, the person will *expect* it to taste good." While we all know that it doesn't necessarily mean it *is* good for us, appearance makes us *want* to taste it. Students using software are no different. Choose programs with smooth animation, depth of artwork and design, bright colors (especially at the elementary level), and CLEAR TEXT!

Staying Power: Choose programs that you can use year after year to minimize your need to replace and upgrade ($$$). Spend your money on a few basic programs with multiple skills levels that will take time for students to complete, then purchase one or two titles a year. Also, rotate programs week to week if possible so they don't get "old" so fast.

Tech Support: Do they have a toll free number? What are the hours? The more accessible the company makes itself to you, the more they want and deserve your present and future business. However, it is up to *you* to know the system requirements of the software and if your hardware can support it before you curse out the technicians.

But I Don't Have a Computer!

Teachers see my enthusiasm for computers in music class and they gripe, "How can I use music software if I don't have access to a computer? I don't even have a classroom!" But over the years I have learned to problem solve. My school has a **computer lab**. I jump in it whenever it's free, with the full support of the computer teachers. (By the way, more than once I have heard them doing music activities with students during computer class, which I thought was great.)

Know your school's classrooms: Sometimes bilingual and special education classrooms have computers. Familiarize yourself with what they have, and hold a few music classes in their rooms to use the software. If you feel comfortable with the teachers, let them borrow or install a program. Recommend titles that your students have used successfully and enjoyed.

Lastly, I test out new titles in our **after-school program**. Have a music club and include computer activities. When there's a will, there's a way.

Tips for Teachers

I have learned (the hard way) that a clear structure and a few simple rules are necessary to maximize computer-based music activities.

Give students an objective to focus the activity. Start off simply, like "create your own four note pattern," then expand.

List what is forbidden. "Do not click on these words: Exit, Shutdown, Save, Delete." Put the list where it is visible. Give a list of alternatives, and help students problem-solve when they get stuck. Don't be afraid to exclude someone who does not follow this rule; usually their partners are frustrated also.

Always debrief. Give students a chance to talk about what they have done. Students' misinterpretations of directions can be useful. Ask students who make errors to explain what they did differently from your directions. One of my groups strung together their patterns and created a group song. Unexpected creations can lead to great places.

Cultivate helpers. Second graders can install and put away CD-ROMs. Older students can supervise younger ones. There's plenty of set up and break down work to do, and students can learn additional skills from helping.

Rules for Students

Buddies are required. Duets, trios, and maybe quartets are acceptable, but no solos.

Sit down or sit out! Students using computers must stay seated at all times, period.

No physical contact: One hand on the mouse at a time. Sit so your legs don't touch.

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DONNA WILLIAMS TWO CENTS' WORTH RECOMMENDED SOFTWARE LIST*

TITLE	PUBLISHER	MUSIC SKILLS	COMMENTS
ArtRageous!	Softkey/The Learning Company	art history exploration, elements of composition, art & music connections in history	Share this with the art teacher
Dazzleloids	Voyager	story with original theme songs by contemporary computer artist R. A. Greenblat	Share this with the art teacher.
Julliard Music Adventure	Theatrix	experimentation, composition, critical listening, theory, puzzles	Students will need instruction time at first; has different levels of difficulty
Lamb Chop Loves Music	Philips	instruments, sequencing	For young children
Morton Subotnick's Making Music	Forest Technologies/ Voyager	experimentation, composition, critical listening, theory, puzzles	no reading required; QuickTime 3.0 or later needed for instrument sounds
The Lost Mind of Dr. Brain	Knowledge Adventure/ Sierra	puzzles, some music history, notation, multiple intelligence theory	has different levels of difficulty; for grades 5+
Thinkin Things 1, 2, and 3	Edmark	ear training, experimentation (1 & 2), drill design (3)	Classic! (and they're not really music programs)

* Some of these titles may no longer be available for purchase.

TEACHER EDUCATION

(continued from page 1)

student teachers/certification candidates who are preparing to be teachers - both special and regular education; **parents** of children with disabilities who have experience with inclusion (or attempts to make inclusion happen); **students of high school age** who have disabilities (or recent graduates); **teachers** in both special and regular education who have experience with inclusion, and those who have no such experience; **paraprofessionals** who have served as aides for included students; and school **principals** and **directors** of special education. If you are interested in participating in one of these focus groups, please email the project directors at technj@tcnj.edu and provide your mailing address, phone number, and the relevant focus group.

In Year 2 the project will use the information it is gathering this year to assist other New Jersey colleges in conducting self-assessments and to develop a model teacher education curriculum which will be designed to prepare graduates to teach in inclusive settings. In Year 3 the model curriculum will be implemented at TCNJ and two other sites, and project staff will develop a plan to impact certification requirements in New Jersey so that all teachers will be better prepared to teach in inclusive settings. These are ambitious plans, but it is hoped that ultimately, New Jersey's children with disabilities will have more opportunities for quality inclusive educational experiences as a result of this kind of teacher education reform.

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Amy G. Dell is Editor-in-Chief of ***TECH-NJ****.*

SOFTWARE FOR SPEECH THERAPY

(continued from page 6)

computer and the applications available. She takes advantage of all software preview opportunities at workshops and conferences. Mrs. Kartzman is eager to share her knowledge with her colleagues, and would like to see ongoing training for staff at the district level. She is clearly an example of a professional who, having witnessed the benefits technology can provide to her students, has committed herself to furthering her own technology skills.

Product Information:

Co:Writer
Don Johnston Incorporated
(800)999-4660
www.donjohnston.com

Bailey's Book House
Millie's Math House
Edmark
(800)691-2986
www.edmark.com

Living Books:
Arthur's Birthday Deluxe
Arthur's Computer Adventure
Arthur's Reading Race
Arthur's Teacher Trouble
Cat in The Hat
Dr. Seuss's ABC
Green Eggs & Ham
Just Grandma & Me Deluxe
Little Monster at School
Sheila Rae The Brave
The Berenstain Bears Get in a Fight
The Berenstain Bears In the Dark
The Tortoise & the Hare
Stellaluna
Broderbund
(800)567-2610
www.livingbooks.com

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Orah Raia is an alumna of the graduate program of the Department of Special Education at The College of New Jersey.

LD and ADD

(continued from page 7)

create the same thing using the computer program *Winword* (Microsoft Office), and then I allowed him to choose which project to submit. His choice was the computer-generated one because he said it reflected his ideas better.

Independence as a Result

Bryan's first attempt on his own was a travel cube project that required him to research and write about Poland. Bryan completed 98% of this project on his own. It was the first time I did not have to almost entirely rewrite what he had written. He used *Encarta '95* (Microsoft) to get information and pictures, as well as some old encyclopedias we had at home. He typed each description using the *Incredible Writing Machine* and spellchecked it himself. The only contribution I made was to proof read the copy and to show him how to enlarge the font size. His project was done with a lot of manual cutting and pasting which produced a very impressive cube. I have truly never seen Bryan so proud of a school project.

The writing skills of both Katie and Bryan have greatly been enhanced by the use of computers. The spellchecking feature, as well as the ease with which they are able to make corrections and edit their work, has helped alleviate much of their frustrations. It has given them a sense of independence and helped boost their sometimes low self images.

Computers Become a New Interest

Bryan is now taking a computer class in school and is just exploding with excitement about all the things he is learning to do. He is learning how to use the different features of Windows '95 and seems to be very good at it. He enjoys changing the screen saver (almost daily) by personalizing messages to me about Jeff Gordon. He also is known to mess with my desktop patterns and colors, which is driving me crazy. He is very enthusiastic about using the computer, and I am hoping to get him using a laptop in school by the time he gets to high school.

Still Searching for a Math Solution

Math is also a difficult area for both Bryan and Katie. I am always searching for programs that will appeal to them and hold their attention. The various *Math Blaster* programs (Davidson) worked well in the beginning, but the children soon lost interest in them. Katie frequently uses *Logical Journey of the Zoombinis* (Broderbund) which is geared toward higher order math functions and logical thinking skills, but this area is not where her problems lie. Both Katie's and Bryan's main difficulty involves the computation of basic math facts. They are not able to master these skills in part because they often lack the motivation needed to continuously practice them. I am currently searching for a program that addresses basic math skills that will motivate them and challenge them to practice. I am confident that such a program exists and that I will find it someday.

Home Setup

Katie and Bryan both have access to two computers in a our home. The "children's computer" is a Compudyne 486 model that contains 500 MB hard drive with 16 MB of RAM. It also is equipped with a 12X CD-ROM, 36 speed modem, Sound Blaster 16 sound card, and an Epson 4600 black and white printer. The only difficulty with this computer is that the hard drive is currently full, which is one reason we opted to purchase a new computer last fall. The new computer, "Mom's computer," is an IBM Kehtron computer with Pentium 250DM Explorer II that has a 4.02 GB hard drive and 32 MB of RAM. This computer also has a 16X CD-ROM, 56.6 Modem, Sound Blaster 16 sound card, Microphone/speakers/headphones and an Epson Stylus Color 600 printer. Both computers are located in our family room and are rarely idle. Everyone in the family actively uses the computers on a daily basis, but priority is given to Bryan and Katie's school-related activities.

Dreams for the Future

The computer has proven to be effective for both Katie and Bryan in improving their writing and composing skills, as well as helping them develop a stronger sense of self worth. They both seem to be highly motivated and very excited whenever they are using the computer. In the near future both children hope to use laptop computers everyday in school in order to improve their organizational, study, and note-taking skills. As for their future career goals I can see how computers could play an extremely important role. Katie's dream to become a writer is now possible. Bryan's creativity and drawing talents combined with his enthusiasm for computers will hopefully someday lead him to a possible career in graphic arts. Perhaps someday both children could work together on books with Katie writing and Bryan illustrating. Regardless of what career path they choose I am sure computers will play an integral part, and I plan to make sure they are both well-prepared and confident using them.

Software Recommended by a Parent of Two Children with Learning Disabilities

Title	Ages	Subject	Company
Reading Galaxy	8-12	Reading Comprehension	Broderbund
Scary Poems for Rotten Kids	7+	Reading	Discis
Storybook Weaver	6-12	Story Writing	MECC/The Learning Company
Carmen Sandiego Series (Jr., USA, World)	5+	Geography, Problem Solving	Broderbund
Logical Journey of the Zoombinis	8+	Math/ Logic	Broderbund
Magic School Bus Explores the Solar System	7+	Science	Microsoft
Super Solvers Outnumbered	8+	Math	The Learning Company
Math Munchers Deluxe	7-12	Math	MECC/The Learning Company
Math Blaster	6-9	Math	Knowledge Adventure/ Davidson
Incredible Writing Machine	6-12	Writing	Broderbund

Margaret Perry is a graduate student in the Department of Special Education at The College of New Jersey.

SOFTWARE REVIEWS

FRACTION ATTRACTION

by Debra Radice

SUBJECT AREA: Math

PUBLISHER: Sunburst Communications, Inc.
(800)321-7511
http://www.nysunburst.com

COST: $79.00

GRADE LEVEL: 3-8

NOTABLE HARDWARE REQUIREMENTS:
Mac: System 7.0 or higher, 8 MB RAM, CD-ROM drive.
Win: Windows 3.1 or higher, 8MB RAM, CD-ROM drive.

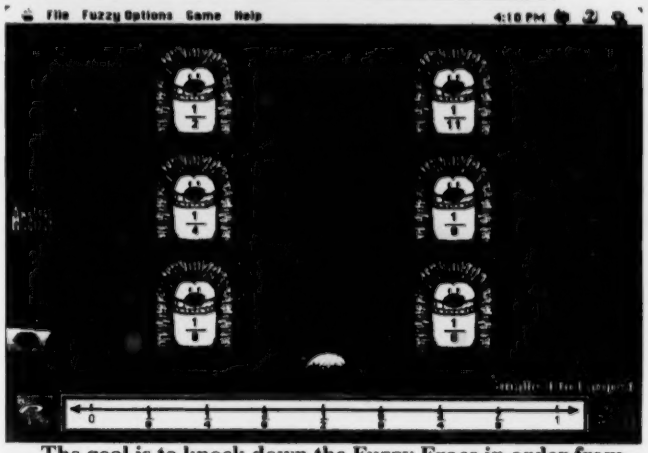
DESCRIPTION: *Fraction Attraction* provides a stimulating environment where students can explore critical fraction concepts including: ordering, equivalence, relative size, understanding fractions as representing distance on a number line, addition and subtraction of fractions, and "counting on" fractions.

Fraction Attraction opens with Gilda, a cheerful alligator who acts as a carnival barker, inviting students to participate in one of four familiar arcade/boardwalk games.

Frac Trac is a representation of the game in which players shoot water at a target to move race horses from start to finish. In Place Horses, the student must analyze the fractions/decimals illustrated on the horses' blankets and predict the finishing order. In Place Jockey, the order of finish is predetermined, and the student must place the correct number on the horse to match the finishing order. The game addresses the concept of a fraction representing a specific distance, as opposed to simply a point, on a number line. It also introduces students to "counting on" incrementally with fractions, decimals, and percents.

In *Frac-o-Wheel* the student must move the ferris wheel clockwise or counter-clockwise to unload passengers from the ride. The ferris wheel has between 4-12 chairs. When it is time to unload a chair, it will flash. The object is to move the chair to the ground in the fewest number of moves. The student must fill in a missing component (numerator, denominator, or both) and select the direction to turn the wheel. This game is designed to provide multiple representations of a fraction, to introduce the concept of equivalence, to foster fraction recognition, and to introduce addition and subtraction with fractions.

Whack-a Frac, the ever-popular "Whack-a-Mole" game, addresses equivalence of fractions, decimals and percents. A target fraction/decimal is represented, and the "Fracs" pop up with a fraction/decimal on their shirts and holding Yes and No placards. The student must determine if the number on the shirt equates to the target number and whack Yes or No. The game can be timed or untimed.



The goal is to knock down the Fuzzy Fracs in order from smallest to largest in this game of Fuzzy Fracs.

Fuzzy Fracs deals with concepts of ordering and relative size of fractions, decimals and percents, e.g., Where does one fraction fall in relation to another fraction? Why is one-half larger than one-third? This is the game where the object is to knock over the animals with a baseball to win a prize. Here, the "Fracs" have fractions/decimals on their shirts, and the student must knock them over in sequential order, either smallest to largest or vice versa.

STRENGTHS: *Fraction Attraction* provides a colorful, fun and exciting way to learn about fractions. The non-threatening environment draws students in and keeps their interest. It is adaptable to students' different learning styles, levels and needs. Each game has difficulty levels, allowing for individual customization.

Problem-specific diagnostic help is available to support students as they learn. If a student is having difficulty solving a problem, the program provides a detailed analysis of the solution. Another very nice component to this software program is the clearly written teacher's guide with 22 "very cool" extension activity worksheets.

WEAKNESSES: As the difficulty level increases, distractible students may have trouble with the cluttered screen.

SUMMARY: This fun, colorful program helps students strengthen their understanding of critical concepts related to fractions. The use of arcade-style games adds humor and entertainment to a subject many students find overwhelming. Teachers and parents will appreciate the customizing features and the quality of the program's instructional design.

Debra Radice is a graduate student in the Department of Special Education at The College of New Jersey.

'TRONIC PHONICS

by Susan Eckstein

SUBJECT AREA: Reading

PUBLISHER: Macmillan/McGraw-Hill
(800)442-9685
http://www.mmhschool.com

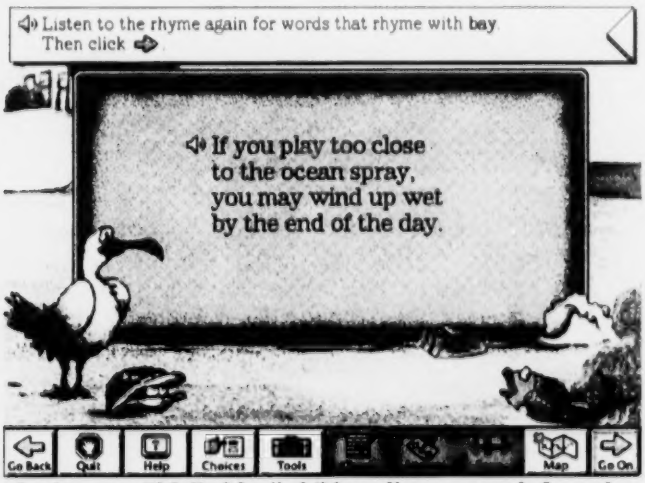
COST: Single Module $49 - $59 each; Lab Packs $147 - $177 per 5-pack

INTENDED AUDIENCE: Primary Grades

NOTABLE HARDWARE REQUIREMENTS:
Mac: 68030 25 MHz or higher, System 7.1 or later, QuickTime for Macintosh 2.5, 4.7 MB RAM
Win: 386/33 MHz or higher for Windows 3.1; 486/33 or higher for Windows 95, 8 MB RAM, Sound Blaster compatible sound card, speakers
Both: 2X CD-ROM drive, 256 color monitor - 13" or larger, microphone, printer recommended

EDUCATIONAL GOALS: To strengthen the understanding of phonograms (word families) and to provide reading and writing opportunities using this skill.

DESCRIPTION: *'Tronic Phonics* is a comprehensive interactive basal type reading program. Fourteen CD-ROMs are available, each focusing on 3-4 specific phonograms. Each lesson targets one phonogram and presents it through a reading section, a set of instructional phonics activities, and a story making activity.



In the story "Molly May" children discover words from the -ay family as they enjoy a story set by the sea.

The reading section is an interactive storybook. The stories are read by a narrator. The narration speed can be adjusted, and the text can be underlined as each word is spoken. The stories are filled with rhymes using the targeted phoneme. The text is simple, and the stories are fun and loaded with educational surprises. Students can elect to have words repeated. When a targeted word is selected, the student is reinforced with special sound effects. Throughout the story, students can select "spotlighted" words to learn interesting facts.

The phonics activity first provides practice listening to the targeted sound. A "key word" is presented, and students must listen for words that rhyme. The rhymes are also presented visually to help the students develop spelling patterns. Incorrect responses are spoken auditorially, and the instructions are repeated. Correct answers are rewarded with sound effects and animations. Next, students practice blending/decoding skills by choosing new letters to join the phoneme to create new words. Incorrect responses are not blended, and the students are told that although their answer may rhyme, it is not a real word. The last phonics activity allows students to write their own rhyme or sentence and use the record function to hear themselves read their creation. A help feature is available to provide hints throughout the phonics activities.

The Make-A-Book section lets students write and illustrate their own stories or change the existing one. The paint feature contains numerous drawing tools and colors, as well as stickers for young authors. They can click on the speaker to have their story read aloud.

STRENGTHS: *'Tronic Phonics* provides students with many opportunities to practice targeted sounds. The lesson format is uniform throughout the series, minimizing instruction time. The tool bar is "child-friendly," and students can make lots of independent choices. Being able to adjust the narration speed is a helpful feature for children with reading difficulties.

Graphics are large and colorful, and choices become "spotlighted" as the cursor passes over them for easy identification. Instructions are clear and concise.

The package comes with a soft cover book of the story, so students can add them to their "library" of knowledge.

WEAKNESSES: Students must be able to use a mouse.

SUMMARY: *'Tronic Phonics* is an excellent series for teaching reading through phonograms. It goes beyond most phonics software by providing opportunities for students to experience word families in *context*, i.e., they first play with interactive storybooks which utilize the targeted phonogram, and after they practice blending/decoding, they can write and illustrate their own stories using the phonograms they just learned. This provides a nice bridge between phonics skills and a whole language approach to reading instruction. Together the 14 CD-ROMs offer a comprehensive package for the teaching of reading in the primary grades.

Susan Eckstein is a graduate student in the Department of Special Education at The College of New Jersey.

PAINT, WRITE & PLAY!

By Lauren R. Golden

SUBJECT AREA: Writing and Illustrating

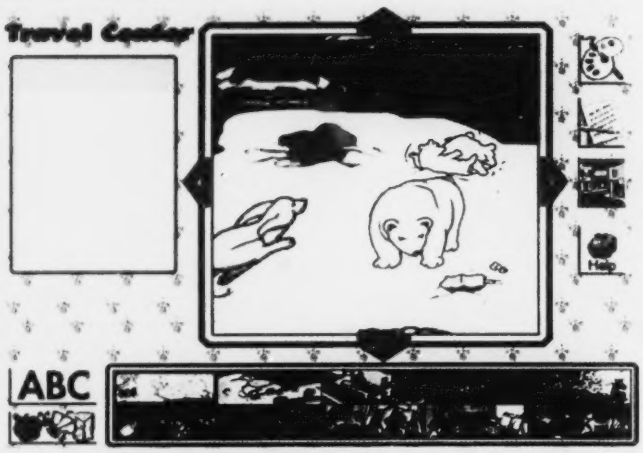
PUBLISHER: The Learning Company
(800) 685-6322
http://www.learningco.com

COST: $24.95

INTENDED AUDIENCE: Grades K - 2

NOTABLE SYSTEM REQUIREMENTS:
Mac: 68030/25 MHz or better, 8 MB RAM with 4 MB available (5 MB available for Power Macintosh), 2X CD-ROM drive, 256-color monitor, System 7.1 or higher.
Win: 486 DX/33 MHz, 8 MB RAM, 2X CD-ROM drive, Windows 3.1 or higher, Windows-compatible sound card, 256 color VGA monitor.

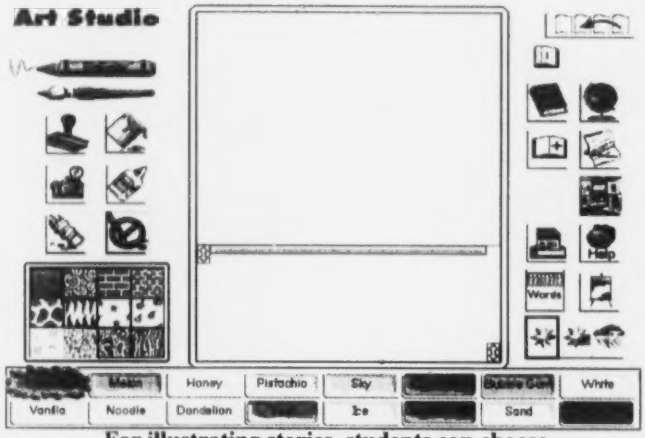
DESCRIPTION: *Paint, Write & Play!* is a program that encourages young children to write and illustrate their own stories. The main screen opens to The Village. From here students can visit three centers: The Travel Center, the Art Studio and the Writing House.



Students choose backgrounds, such as this Artic Scene, in the Travel Center.

The Travel Center provides story ideas for young writers. Students can explore ten different places such as home scenes (e.g., bedroom, basement, living room, etc.) and environmental scenes (e.g., the Arctic and Africa). When students come across a word they do not know, a simple mouse click provides the correct pronunciation and a definition. If they like, they can add the word to their "personal word list."

In the Art Studio students can illustrate their stories. They can use the clip art provided or create their own illustrations. The clip art consists of environmental backdrops and characters. If students want to create their own illustrations, the program provides paint brushes, stamps and patterns. The program pronounces the names of the colors when the mouse passes over them.



For illustrating stories, students can choose from fun color palettes, such as this selection representing "sunny day" colors.

Students compose their stories in the Writing House. Students can use their personal word list and/or illustrations as a beginning point, or they can just begin to write. Writers can view the text as it will appear underneath each illustration, or they can view the layout of the entire story using a storyboard. They can listen to their stories being read aloud by the program.

STRENGTHS: The Travel Center environments are stimulating and can help expand students' imaginations. Each environment provides its own unique vocabulary. The sound effects and animations are entertaining and engaging without being distracting. The Art Studio provides an extensive choice of 48 "kid colors," such as grape, sunshine and cotton candy.

The program provides auditory feedback by reading aloud students' stories. Teachers can customize the program to correspond to classroom assignments by controlling the length of the story, the vocabulary and the layout.

SUMMARY: *Paint, Write & Play!* is a fun, easy-to-use program that taps into children's imaginations to help them create and illustrate stories. Pick-and-click word lists help early writers add words to stories without typing, and the text-to-speech feature lets students hear their stories read aloud.

Lauren R. Golden is a graduate student in the Department of Special Education at The College of New Jersey.

TALKTIME WITH TUCKER

by Francine Kartzman

SUBJECT AREA: Expressive Language

PUBLISHER: Laureate Learning Systems
(800)562-6801
www.llsys.com

COST: $125 Mac/Win CD-ROM (available January 1999), Mac disks, DOS disks

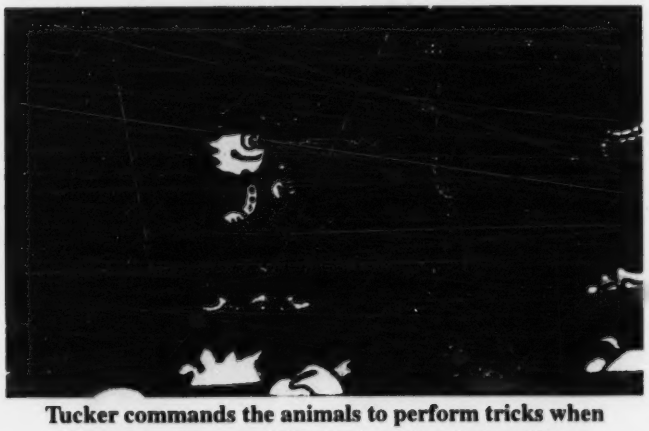
INTENDED AUDIENCE: Children ages 2-6 with developmental disabilities, language-learning disabilities, physical and visual impairments, and autism

NOTABLE HARDWARE REQUIREMENTS:
Mac CD-ROM: System 7.5 or later, Power PC (some 68040 processor models), 8 MB RAM, 4X CD-ROM
Win CD-ROM: Pentium 90 MHz or higher, Win 95 or later, 16 MB RAM, Windows compatible sound card, 800 x 600 SVGA graphics monitor
Mac disk version: System 7.5 or later, minimum 68040 processor, 8 MB RAM
DOS disk version: Sound Blaster card (or 100% compatible)
All: Microphone, 13" or larger color monitor

OPTIONAL HARDWARE: Touch screen, single switch

EDUCATIONAL GOALS: To encourage children to practice a variety of vocalization skills and to experiment with the duration, pitch, and volume of their utterances.

DESCRIPTION: *TalkTime with Tucker* is a voice activated software program. Tucker, an animated character, moves and talks when children talk or make sounds into a microphone. This program does not require precise, accurate speech input. Almost any utterance produces an appropriate response.



Tucker commands the animals to perform tricks when children make sounds in the Amazing Animal Show.

For non-vocal children, single switch input activates Tucker. This encourages turn-taking and gives them the experience of participating in conversation.

Five adventure activities accommodate a range of children at different functioning levels:

- In *On Stage*, Tucker acts as Master of Ceremonies of the Amazing Animal Show. Cause and effect and turn-taking are targeted as any sound that children make will make an animal perform a stunt.
- Children imitate animal sounds in *On the Farm*. As each animal makes its sound, children repeat it, and the animal puts something in Tucker's wheelbarrow.
- In *A Walk in the Woods*, children are encouraged to increase the length of their vocalizations. Children make things change, such as caterpillars, birds' eggs, and tadpoles. The longer the vocalization, the more that happens on screen.
- Children experiment with pitch and volume in *Fantasyland*. Mystical characters block Tucker's path to the castle. Children must speak louder or softer to get by them.
- Casey the Chameleon asks open-ended questions in *Let's Talk with Casey the Chameleon*. In this activity, which is designed to encourage natural communication exchanges, Casey responds by transforming into the object he is talking about.

STRENGTHS: *TalkTime with Tucker* can be individualized for children with a broad range of disabilities. The sensitivity of the microphone can be adjusted, as can the amount of response time required, the length of time children must speak, and how quickly the program responds when children stop speaking. The program also contains an invaluable recordkeeping tool that tracks children's progress. This log can be printed or cut and pasted into a wordprocessing document so that individual notes can be added.

WEAKNESSES: Some of the speech output may be difficult for children with hearing impairments to understand.

SUMMARY: *TalkTime with Tucker* is visually appealing, imaginative and colorful, but at the same time the screen remains uncluttered. The activities are easy to use and engaging for young children. The customizable options and recordkeeping features make this program a good choice for speech/language specialists to use for encouraging expressive language in young children.

Tiger's Tale

This new program from Laureate Learning Systems stimulates language production by encouraging children to talk for a Tiger who has lost his voice. Preschool and elementary students alike will delight in recording their voices to create their very own movies.

Francine Kartzman is a Speech/Language Therapist who completed a graduate course in Assistive Technology at The College of New Jersey.

SWITCHIT! SOFTWARE: PICTURES, PATTERNS, SCENES, OPPOSITES

by Theresa R. Lupo

SUBJECT AREA: Switch Training, Cause and Effect, Early Scanning

PUBLISHER: Inclusive Technology
available from IntelliTools
(800)899-6687
www.intellitools.com

COST: $49.95 each for disk version or $180.00 for the 4-program bundle on CD-ROM

INTENDED AUDIENCE: Switch users

EDUCATIONAL GOALS: To develop the concepts of cause and effect, scanning, turn-taking, and switch training.

NOTABLE HARDWARE REQUIREMENTS:
Mac: LCIII or better, System 7 or higher, 8MB RAM, CD-ROM drive for bundle.
Win: Windows 3.1 or higher, 8 MB RAM, Win compatible sound card/speakers, SVGA monitor, CD-ROM drive for bundle

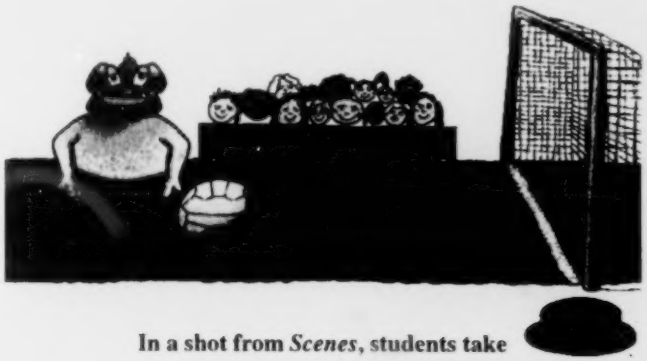
ACCESS OPTIONS:
•mouse operation
•single/two switch
•touch screen
•Concept Keyboard
•IntelliKeys

DESCRIPTION: This series provides switch users with four lively and colorful programs for entertainment and switch training.

In *Pictures* users develop awareness of cause and effect. They are prompted to press the switch to build common objects one click at a time. Each click is followed by the addition of an item to the scene. When the task is complete, users are rewarded with a lively and amusing animation.

Patterns builds upon cause and effect awareness by encouraging users to build 10 geometric patterns by pressing the switch. This activity has three levels of complexity built in. Upon completion of the pattern, students are rewarded with vibrant color changes, movement and music. *Patterns* offers a variety of color schemes, including black and white, vivid, metallic, pastel, and monochrome. Pattern complexity and movement speed may also be customized. The black and white setting may be particularly helpful for users with low vision.

Scenes promotes turn-taking as users add new elements to familiar scenes. Completed scenes are rewarded with animated sequences. Customized switch colors let each user know whose turn it is.



In a shot from *Scenes*, students take turns trying to score a goal.

Opposites introduces users to early learning concepts through simple scanning. The blue monster leads users to explore big/little, up/down, in/out, open/closed and hot/cold through a variety of scenes. Comical animation rewards correct choices. Two to four objects appear on the screen. After several successful presentations of 2 objects, the program will automatically introduce 3, then 4. *Opposites* allows scan speed and repeat rate to be customized, as well as allowing auditory, text cuing or both.

STRENGTHS: Probably the most exciting feature for teachers is the ease with which these programs can be customized. They can change speed and response time, number of switch clicks, text/speech or both, and which concepts will be practiced, all from one readily accessible menu. The scene's background color, switch cap color and even scan box color can be customized. The error indicator, an animated "Uh-uh," from the blue monster, may also be turned off. Customized settings can be saved for individual users. Clip art is provided so flash cards or classroom materials can be created using the characters and objects in the programs.

Students may enjoy the simple scenes and clear feedback for both correct and incorrect responses. Users are prompted to click the appropriate switch, first with a picture of the switch, then an animated picture and finally an auditory reminder. Users may also view a word or picture menu for selecting their activities.

WEAKNESSES: Activities from the menu cannot be selected with a switch; a mouse click is required.

SUMMARY: These four simple programs teach cause and effect, switch use and early scanning through a variety of activities. The clear, immediate feedback, prompting schedule and amusing animation are sure to motivate students to build switch use skills. Teachers will enjoy the ease with which they can modify the programs to meet individual user needs.

Theresa R. Lupo is an alumna of the graduate program in Special Education at The College of New Jersey.

I recommend the following program/product for consideration for inclusion in a future issue of TECH-NJ.

Part A

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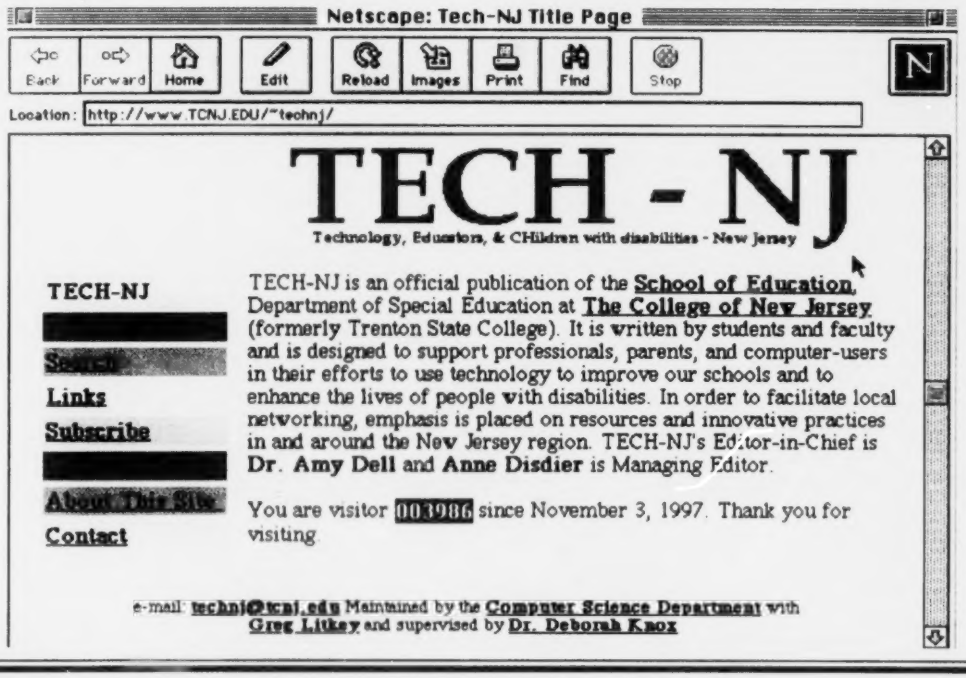
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